OCT 22 '42

THE DENTAL Digest

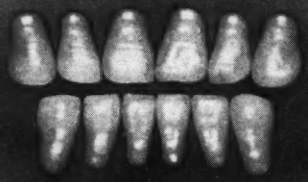
University of Michigan,
General Library,
Ann Arbor, Mich.
100
12-42
B

OCTOBER 1942

It's the Combination—

ACTUAL SIZE

natural colors



and natural carvings

—that makes it easy for you to achieve maximum individuality in every denture made with

VERI-CHROME
TRADE MARKS REG. U. S. PAT. OFF.
FIVE PHASE ANTERIORS

If you haven't received the new Universal MOLD CHART, illustrating in color Veri-Chrome Five Phase Anteriors and Veri-Chrome Dr. French's Posteriors, write to us for your copy.

Look for the trade mark ⬠ on the lingual of each tooth.

UNIVERSAL DENTAL COMPANY

Manufacturers of the Most Complete Line of Porcelain Teeth

48th & Brown Sts. Philadelphia, Pa. U.S.A.

THE DENTAL Digest

VOL. 48 NO. 10

OCTOBER 1942

Modern Inlay Procedure, *Leo S. Seidner, D.D.S.* 464

The Cast Banded Acrylic Veneer Crown, *Roger K. Stockton, D.D.S.* 470

Plastic Prostheses for Lost Anatomic Parts, *David F. Heron, D.D.S.* 472

Combined Anatomic and Functional Techniques of Denture Construction 475
Jerome M. Schweitzer, D.D.S.

The Editor's Page 479

Dermatologic Lesions of the Mouth (An Abstract) 488

Contra-Angles . . . . . 48 Dental Meeting Dates 489

EDWARD J. RYAN, B.S., D.D.S., *Editor*
ETHEL H. DAVIS, A.B., *Assistant Editor*
708 *Church Street, Evanston, Illinois*

About Our CONTRIBUTORS

Leo S. Seidner, D.D.S. is a graduate of the Chicago College of Dental Surgery, the class of 1920. Doctor Seidner wrote for this magazine in June, 1932 a step-by-step Technique for Gold Inlays and in May, 1938 an article on Fixed Bridge Esthetics. Doctor Seidner's painstaking and meticulous interest in the gold inlay has resulted in the present discussion of frequently overlooked details.

Roger Kenneth Stockton, B.S., D.D.S. is a graduate of the University of Illinois (1939). Doctor Stockton taught at Illinois where he was associated for two years with Doctor Stanley Tylman in the department of Crown and Bridge. He is a general practitioner.

David F. Heron, D.D.S. (University of Southern California, 1919) was formerly an instructor at Wayne University College of Medicine. He has been a contributor to the medical and dental journals—his previous publication in this magazine (Correction of Anatomic Defects by the Use of Liquid Rubber, October, 1940) was the subject of The Editor's Page in the issue of publication. Doctor Heron has been chief dental surgeon of the Alexander Blain Hospital where, we are informed as this goes to press, he is attached to a base hospital unit as Major Heron and expects to be in Service shortly.

Jerome M. Schweitzer, D.D.S. (New York University College of Dentistry, 1918; B.S., College of the City of New York, 1927) is one of our regular contributors as our regular readers know. Doctor Schweitzer has a long list of practical titles to his credit, the last in July: A Functional Splint for Increasing the Vertical Dimension.

Copyright, 1942, Dental Digest, Inc. See page 494 for Subscription Data, etc. The magazine is mailed on the fifteenth of the month of issue.

Modern Inlay Procedure

LEO S. SEIDNER, D.D.S., Chicago

DIGEST

The direct technique of modern inlay procedure is advocated, and frequently overlooked details are stressed with a view to overcoming difficulties and failures. An experiment is suggested whereby the advantages of the direct over the indirect method may be proved.

Seven reasons are given for inlay failures by the direct method: (1) improper choice of wax pattern; (2) faulty impression technique; (3) faulty wax manipulation; (4) incomplete carving and molding of wax pattern; (5) unsuitable investing material and improper mixing of it; (6) careless and hurried investing, and (7) too rapid wax elimination. Each of these reasons is explained in detail with the aim of successful application of essential principles of inlay restoration.

THE ART OF inlay construction has undergone such vast improvement in the last ten or fifteen years that the incidence of a poorly fitting gold inlay restoration should be an object of rare occurrence. That the opposite, however, is the case, is attested by the frequency with which poorly constructed and badly adapted inlay restorations are still to be found in the mouths of dental patients. Thus we must wonder whether the underlying fault lies in the method itself, or in the operators' abuse of principles governing the method.

Of foremost importance in the process of inlay construction, next to cavity preparation, is the choice of a workable technique—one that is simple and practicable, applicable to average skill, and shorn of inanities and useless complications. Dominating the field of inlay construction at the present time are two schools of thought. One advocates the direct inlay technique, and the other, the indirect.

Up to about ten years ago, inlay construction and allied restorations were more or less haphazard procedures. Little was known of the rôle materials and their physical properties played in inlay restorations. It is only comparatively recently that the dental profession, in cooperation with the Bureau of Standards, undertook the study of materials—their physical properties and how these are influenced by thermal conditions, which, in turn, influence the outcome of the finished product. On these observations are based present day methods of inlay construction. And as a result of these observations, furthermore, the chances of successful inlay restorations by the indirect technique are shown to be slight if not impossible. This assertion is unbiased, for it is based on results of actual experiment which anyone sufficiently interested may prove to his own satisfaction by the following procedure:

Experiment

Part 1—Assuming that the cavity has been prepared in accordance with the accepted rules governing cavity preparation, a tube impression may be taken with either modeling compound or wax, or any other material the operator may prefer. From this impression a die is obtained of either stone or amalgam, as is the practice of the followers of the indirect technique (Fig. 1). A wax pattern is made on this die, and the wax pattern thus obtained, if shown on close examination to be of accurate adaptation to the die, is removed and transferred to the preparation on the natural tooth. Careful examination will show that the pattern fails to present the close adaptation on the natural tooth that it did on the preparation of the die.

Part 2—If this pattern is now readapted to the cavity walls of the natural tooth and transferred onto the die, it will conversely show considerable distortion and lack of marginal adaptation.

Part 3—As a final test the pattern may again be transferred to the preparation of the natural tooth in the mouth of the patient, carefully readapted, withdrawn, invested, and cast. It will be interesting to observe that the cast inlay restoration will fit perfectly the preparation on the natural tooth (Fig. 2, A), provided modern casting technique has been diligently followed, but will fail to go into position on the die (Fig. 2, B).

Part 4—On the other hand, if the inlay were to be cast from the wax pattern obtained directly from the die, the casting would not go into place on the natural tooth or, at other times, will, on close examination, be seen to be of loose and inaccurate adaptation, ranging from leaking margins to pronounced distortion (Fig. 3, B).

Explanation—The materials involved in the impression and die undergo volumetric changes from the time of impression taking and die formation to the time of setting and solidification. This accounts for the discrepancies. Added to these known quantities must be taken into account unknown factors, such as possible distortions of the impressions; failure of the impression material to register the finer phases of the preparation; chips and fractures to the impression on withdrawal; and finally, failure of the material to register in sharp outline the detailed phases of the impression. It is only by closing our eyes to demonstrable conditions, therefore, that we can persuade ourselves that precision inlay castings can be obtained by the indirect method.

Advantages of Direct Method

The direct method of inlay construc-

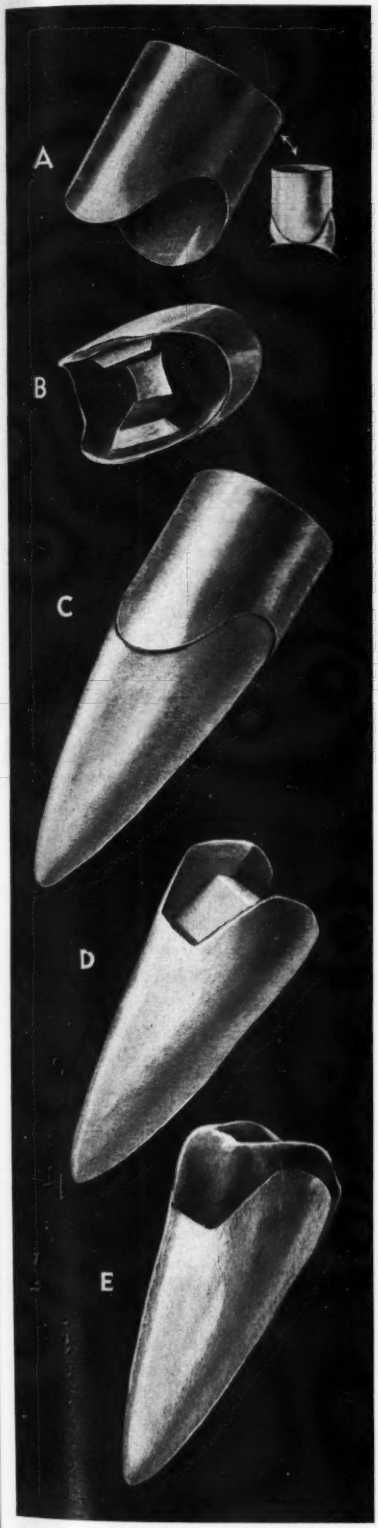


Fig. 1—Indirect method. A, Copper tube properly festooned to facilitate withdrawal of impression; B, modeling compound impression; C, amalgam die; D, amalgam die trimmed and ready for wax impression; E, wax pattern completed.

tion is by far the simpler and less hazardous of the two methods, involving fewer steps, fewer materials, the volumetric variables of which must be accounted for, or which must be compensated for if all variables are known.

The almost universal tendency toward short-cuts, it is my belief, leads to the consumption of more time than is required by the regular course and to inferior end-results. This is not to say that I do not recognize the full value of simplicity. I deplore round-about procedures of arriving at results that might be obtained just as well by simpler and less complicated methods.

Reasons for Inlay Failures by Direct Method

To outline briefly the major points responsible for inlay failures in the direct inlay technique the following rank as the foremost in order of presentation: (1) improper choice of pattern wax; (2) faulty impression technique; (3) faulty wax manipulation; (4) incomplete carving and molding of wax pattern; (5) unsuitable investing material and improper mixing of it; (6) careless and hurried investing, and (7) too rapid wax elimination.

Essential Details in Principles of Direct Inlay Technique

Choice of Pattern Waxes—There are a number of pattern waxes on the market, some of which are widely used and favored by many operators. Certain waxes are often chosen for the ease with which they can be manipulated and carved. This admittedly desirable feature, however, does not always make such pattern waxes the most suitable. The unsuitability lies in their being either too soft under mouth temperature, being easily distorted, or lacking in proper tensile strength; thus they may be responsible for failures.

The more suitable pattern waxes are those of higher fusing point, dense and tough in consistency, yet readily moldable under proper temperature, and having the ability of being drawn over the enamel margins to a fine edge (Fig. 4, A). The softer low-fusing waxes are generally structurally too loose, and lack that consistency which permits burnishing of margins without losing molecular continuity (Fig. 4, B). This

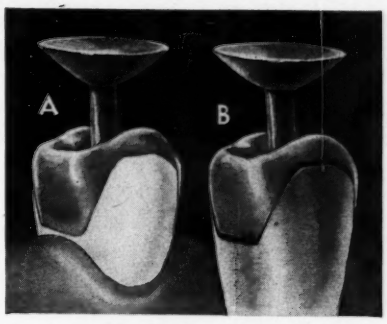


Fig. 2—A, Casting made by direct method in position on natural tooth showing accurate adaptation; B, same casting on amalgam die showing failure of casting to go into position.

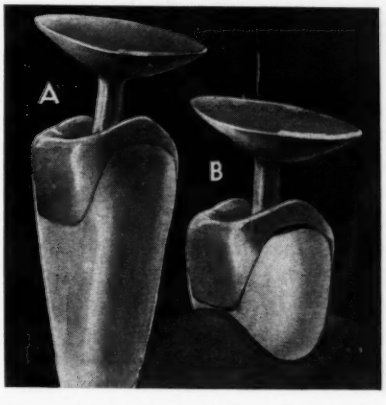


Fig. 3—A, Casting made by indirect method on the die showing accurate adaptation; B, same casting on natural tooth showing failure of the casting to go into position.

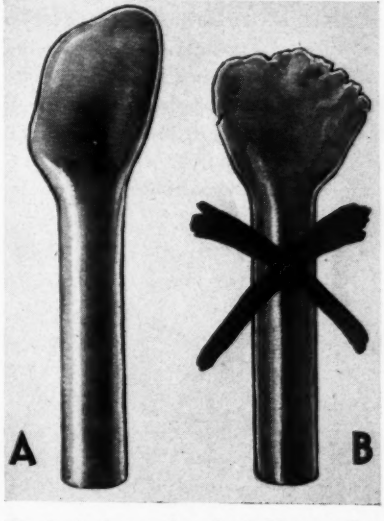


Fig. 4—A, Appearance of suitable wax when pressed thin; B, unsuitable wax showing serrated and broken edges when pressed thin.

failing of the softer waxes, though rather popular with most operators, may not be noticeable until the casting is completed and the restoration is in position

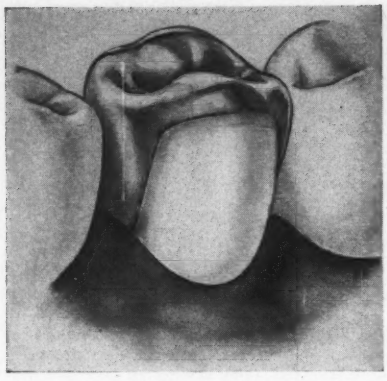


Fig. 5—Year-old restoration with frayed and failing margins. Tooth structure darkened at margins because of grinding down enamel to meet shortage of restoration.

on the tooth, when it is frequently found that the restoration fails to cover the crests of the enamel margins. Some operators, in quest of an explanation for this shortcoming, ascribe this failing to shrinkage of the gold during the casting process. As a matter of fact, however, the fault lies in the structural weakness of the wax and the lack of proper tensile strength to enable the wax to be finely drawn over the enamel margins and maintain itself without becoming disintegrated in undergoing dissolution under the action of the carving instrument or the frictional action produced by the linen strip or pellet of cotton used for finishing the pattern.

This marginal shortage of the restoration necessitates the trimming of the enamel margins down to the level of the restoration, so as to give the restoration the appearance of a smooth continuous inlay. The detrimental effect of this practice becomes obvious when this restoration is viewed in from six months to a year later, when, what at first appeared to be a smooth, well-adapted gold restoration, will appear frayed and failing around the margins. The tooth structure along the restoration also seems dark and lacks the translucency usually present in healthy enamel of normal thickness (Fig. 5). This condition must be ascribed to the destruction of the enamel surface necessitated by the misfitted restoration; and to the fact that by grinding down the enamel to meet the shortage of the restoration, the enamel rods, already deprived of metal protection against attritional wear, were still further weakened, so that they were unable to withstand normal masticatory stresses.

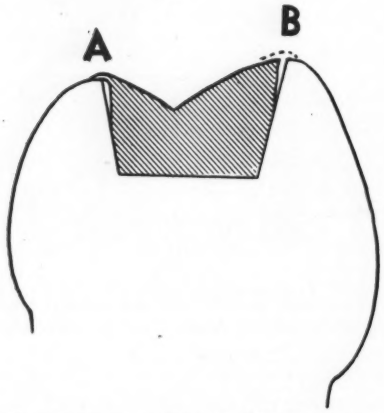


Fig. 6—Cross section: A, Overhang concealing lack of contact; B, gap revealed after grinding away overhang

There are those who, in order to overcome this weakness of the wax, make it a practice to permit unduly thick overhanging margins on the wax pattern. The intention of the operator is to leave the overhangs to be dressed down on the casting. What does not occur to him is that the operation is not so simple as it would seem, and the results cannot thus be so satisfactory as might be expected. It is no exaggeration to state that this practice often upsets the best efforts.

Fig. 6 illustrates the relationship of the wax pattern to cavity walls immediately below the marginal outline of the preparation. "A" shows the absence of frictional contact of the wax impression as it approaches the marginal third of the cavity preparation. Why the wax should thus fail at this point to approximate and hug the cavity walls to the degree it does at the deeper phases of the preparation is not clear, at least not to me, except to reason that the wax at this point of the impression has cooled sufficiently to have lost plasticity and fails to flow into the desired relationship at these phases of the preparation. Perhaps the overlapping wax prevents compression of the wax impression into closer proximity at the marginal phases of the preparation. Whatever the cause, this condition does exist—as becomes evident when the overhangs are eliminated (Fig. 6, B). Invariably it is discovered that what outwardly appeared as a well-adapted cast restoration proves an overhang that only served to conceal wide gaps of space between the restoration and marginal tooth surfaces. Any attempt at bringing the restoration into more proximal relationship with the marginal surfaces of the cavity preparation, by grinding and burnishing, only tends to widen the gaps already existing. At times one may succeed in bringing about a rather simulated appearance of close relationship between restoration and tooth surfaces in this way, but this soon proves to have been only a false adaptation, consisting of a thin film of gold spanning across the existing gaps, shortly to become dislodged by wear or even under the polishing brush.

Fig. 7—Band cut and contoured to fit the tooth within matrix retainer. The band is in the retainer, not the tooth.

Impression—At a recent meeting I observed a demonstration by one of the clinicians on how to obtain an impression by first applying the matrix around the tooth, then forcing wax through the matrix into the preparation. Twice the operation failed entirely; the third attempt the clinician considered successful and proudly held it up to be viewed

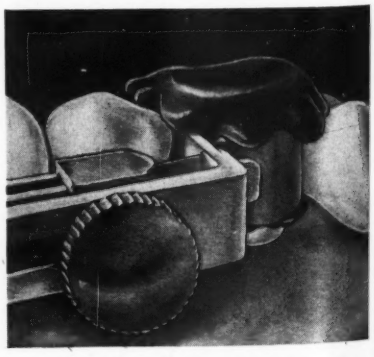


Fig. 8—Wax pattern packed into matrix.

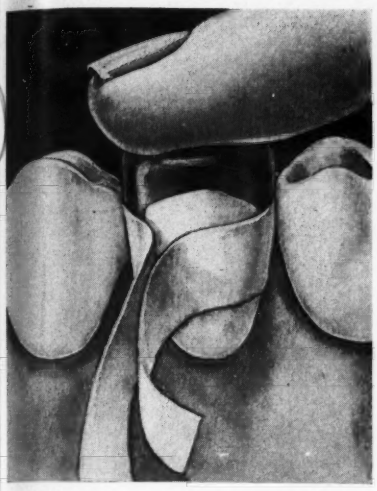


Fig. 9—Pattern readapted with linen loop gripped with thumb and forefinger while pressure is exerted on occlusal aspect of impression.

by the audience. Sincerely interested, I examined this impression, only to find that it lacked every indication of an accurate impression, and was grossly deficient in marginal coverage. The gingival seat, as well as the cavo-angles, appeared rounded, although the preparation was sharply enough outlined.

It is a well-established practice in dentistry to employ trays for all manner of impression-taking, such as dentures, crowns, and bridges. In none of these is a tray or matrix more indicated than in inlay and allied restorations. The matrix should be fitted to embrace the tooth under operation loosely, so as to provide ample room for wax extention to give the pattern proper anatomic outline. The matrix band should be contoured and fixed in the matrix retainer (Fig. 7). The wax should be held high over the flame of the bunsen burner or alcohol lamp, and slowly warmed. The pattern wax should never be heated to the point of free flow, but to a degree that, when pressed or pinched between forefinger and thumb, will spread evenly, without showing ruptured or cracked surfaces (Fig. 4). At this stage the pattern wax is packed into the matrix, held again high over the flame for a second or two, and forced over the tooth (Fig. 8). Pressure is maintained until cooled. One or two blasts from the cold air syringe will render the wax sufficiently set to permit releasing of the matrix from the retainer and the careful removal of the band. All wax overflow around the matrix band should be cleared away so as to facilitate the band's removal without distorting the impression.

Wax Manipulation—It must not be presumed that the impression thus obtained, accurate though it may seem, need be given no further attention. It should be remembered that wax in itself is an unstable material, subject to thermal changes and variations and distortions that may occur during carving and molding of the pattern. The maintenance of pressure while the wax impression is still confined within the matrix helps considerably to control the molecular arrangement toward maximum density and fair stability. But this by no means precludes possible changes that may take place once the wax is freed from the confines of the matrix. Manipulation during carving of the pattern may induce changes or distortions to upset the initial accuracy of the impression; thus it is important that throughout the carving and pattern formation, frequent readaptations of the wax impression be resorted to until final completion of the pattern. This, it will be realized, will prove a well-timed precaution, fully justified by the excellence of the end-result.

When the greater bulk of wax overhanging the cavity preparation has been eliminated, the tooth under operation containing the wax impression is flushed with water as hot as the patient can comfortably tolerate. A linen strip is then passed around the tooth through both contacts, to form a loop with both ends of the strip to meet at the buccal aspect (Fig. 9). These are gripped between the thumb and forefinger of one hand, and the loop is tightened; a finger of the other hand is pressed against the occlusal aspect of the impression, to prevent the unseating of the wax impression while the pressure of the strip is brought to bear against the proximal wings of the impression. This means of pattern readaptation should be frequently employed during the carving of the pattern. When the completion of the pattern is neared, the occlusal depth is established, a tightly rolled pellet of cotton of the approximate size of the occlusal dimensions of the tooth is placed between finger and pattern to provide an all-over contact and thus prevent the pattern from lifting out of its position in the cavity preparation when the tightened strip is brought to bear upon the lateral wings of the pattern. The pellet of cotton, acting as a plunger, also aids in bringing about maximum occlusal adaptation (Fig. 10).

Carving and Molding of Pattern—The carving of the pattern should be performed with explorer or explorer-like instruments, and should proceed carefully by first removing the surplus wax overhanging the cusps and margins. The proximal margins should be carved with the long axis of the tooth, or in an occluso-gingival direction (Fig. 11, A), and should proceed until the marginal outline of the preparation becomes visible under a thin film of wax overlap. The occlusal carving should proceed in a mesio-distal direction, and should be performed with a right angle explorer so directed that half of the explorer point will rest on the tooth surface while the pointed half doing the work is inclined so as to conform with the occlusal depth indicated by the existing occlusal depth of neighboring teeth (Fig. 11, B). It is important that the inclined planes of the occlusal surface be established on the pattern, for by so doing maximum marginal adaptation is obtained. When all marginal overlaps have been nearly removed, it is advisable to flush the nearly completed pat-

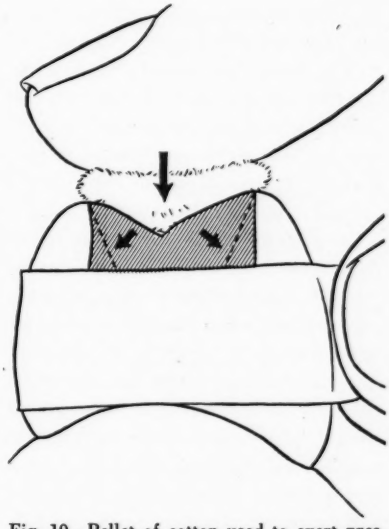


Fig. 10—Pellet of cotton used to exert pressure as carving of pattern nears completion.

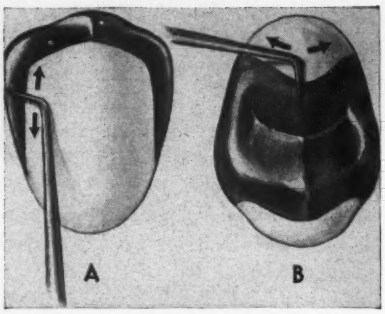


Fig. 11—Carving margins with half the explorer point resting on tooth surface.

tern again with hot water and repeat the readaptation process with the linen strip and pellet of cotton. The final finish of the pattern consists of the removal of all wax overhangs with carving instruments and drawing a linen strip over the margins. This is followed by polishing the pattern with a small wad of cotton held between the fingers or wound around the beaks of cotton pliers (Fig. 12). The cotton, in close contact with the wax pattern, is drawn gently but firmly over the margins, thereby removing the final overhangs and at the same time burnishing the margins into the closest possible relationship with the surfaces of the preparation. The gingival marginal overhangs are removed by passing a narrow linen strip over them, the precaution being taken not to dislodge the pattern from the cavity seat while this is performed. The pattern, when completed and viewed outside of the mouth, should be free of all marginal overhangs, and should present fine transparent margins, the edges of which are even and non-serrated (Fig. 13). It will be found that the casting duplicating this type of pattern will not only fit every phase of the preparation, but will require little work and time in stoning and discing to make it an effective and esthetic restoration.

No pattern may be considered finished and ready for investing until the described characteristics are definitely represented when finally withdrawn from the cavity position. If imperfections are present when the pattern is held up against the light, the pattern should be reseated in the cavity, corrected, readapted with strips, burnished and polished as previously described with a pellet of cotton, and carefully withdrawn.

Cleanliness of Pattern: Mounted on the sprue, that pattern should be closely inspected for the presence of cavity débris, and if present, the pattern should be cleansed with tincture of green soap on a soft camel's hair brush, or preferably gold-dust suds, and rinsed with room-temperature water. The importance of a clean pattern is almost always mentioned by lecturers and clinicians dealing with the subject of inlay construction and allied restorations. It would seem that to mention it here more than casually is unnecessary; nevertheless it is stressed that the importance of an absolutely clean pattern in precision inlay restoration must not be undervalued. Although every other step in the technique may have been carried out meticulously, the restoration may fail to go into position with the precision that the operator confidently expected. A small blood clot, tooth or gutta-percha fragments or food particles, or any other cavity débris, may have been allowed to remain undisturbed on the cavo-surface of the pattern when it was invested, and may have

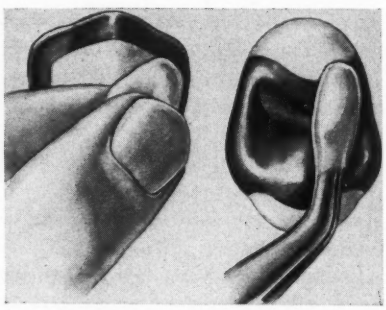


Fig. 12—Polishing pattern with cotton wads.

had a bearing on the fit of the restoration and thus cause an inlay failure. I have heard it argued that foreign bodies present on the pattern become part of the investment and therefore cannot influence the surface smoothness of the casting. This is neither scientific nor logical, inasmuch as firing of the mold to 1200° F. certainly would destroy these foreign bodies, leaving pits and fissures in their places in the mold, which become elevations in the positive reproductions on the casting. A clean pattern is indispensable and its importance in precision casting cannot be over-emphasized.

Size of Sprue: The thickness of the

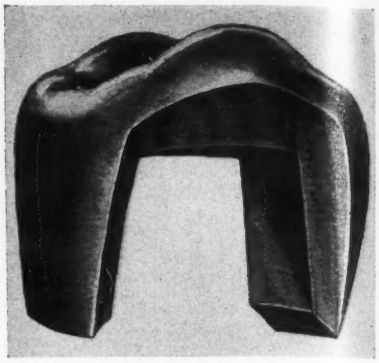


Fig. 13—Finished pattern.

sprue is determined by the size of the pattern. As thick a sprue as possible is most desirable for the production of a dense non-porous casting. The length of the sprue, too, is an important factor toward smooth castings; thus its length, when mounted on a crucible former, should never be more than about half an inch, preferably less (Figs. 2 and 3). An appropriately thick short sprue will eliminate the necessity for the use of a reservoir bead, particularly in larger castings, from which to draw during the setting and cooling of the gold. The longer and thinner the sprue is, the more likelihood is there of a porous casting.

Roughness of Castings—Information is frequently sought on how to prevent rough castings. This is an important question, because a rough casting will more often than not defeat the best efforts to bring about a fine wax pattern.

Briefly, there are three causes responsible for rough castings: (1) a too-thin mix of investment; (2) too rapid wax elimination; (3) subjecting the mold to heat treatment before final and complete setting of the investment has taken place.

1. Investment Mix: A proper mix of investment is often described as being of a thick creamy consistency. This, in my opinion, does not properly describe what the consistency of an investment mix should be to assure smooth casting. Practical experience has proved to me that the best results are obtained from as thick a mix as is possible, consistent with the type of investment employed. As a generality, an investment mix should never be so thin as to permit pouring the investment directly from

the mixing bowl into the casting ring. Its consistency should tend more toward that of putty than cream.

2. Wax Elimination: Ranking next in importance among causes producing rough castings is that of too rapid wax elimination. It will be observed that when the mold is subjected to sudden high temperature, sufficient to cause the water of crystallization to boil out of the investment, the water thus forcibly expelled carries along with it numerous particles of the investment, thereby disrupting the surface smoothness of the mold against which the molten gold is cast. The porous surface thus created inside the mold is as a consequence reproduced in the casting in the positive form characterized by numerous varying-sized nodules covering the cavosurface and outer surface of the casting. These nodules often present a problem when they appear in locations of the inlay difficult to reach without injuring the margins.

3. Heat Treatment of Mold: Third and final of the main factors responsible for the production of rough castings is subjecting the mold to heat treatment before final and complete setting of the investment has taken place. I had occasion to be impressed with the importance of this factor not so long ago when training a new assistant. It took some days to discover that she did not allow sufficient setting time for the investment, which was responsible for the sudden appearance of rough castings. When this was corrected, smooth even-textured castings resulted.

Investing Material and Mixing—I prefer an investment which, when properly proportioned with water, sets to a hard stone-like consistency—one that is capable of withstanding from 1200° F. to 1300° F. without cracking or disintegrating; and, what is of equal importance, is that it have sufficient setting and heat expansion to compensate for wax variables and gold shrinkage. In this connection it may be remarked that the thicker the investment mix, the better will be its compensating expansion. It is important to mention further that to avoid air entrapment in the investment which constitutes a possible cause for nodules appearing on the casting, the mixing bowl containing the investment should be vibrated for a few seconds to drive off the entrapped air induced by stirring the investment. If a vibrator is not available, a few taps of the bowl against the laboratory bench will accomplish the same results.

Investing—The investing of the wax pattern remains as the final step toward precision castings. I prefer to paint the pattern with the investment mix and vibrate powder into it to saturation. To bring this about, with a moistened small sable hair brush a thin coat of the investment mix is carefully laid on the pattern and vibrated by a mechanical vibrator or by drawing a rasp or a serrated instrument handle, such as the handle of extraction forceps, across the rim of the crucible former base, causing condensation of the investment against the pattern. With a large camel's hair brush dipped in dry investment powder, the investment-covered pattern is dusted and again vibrated. This dusting and vibrating is continued until upon vibration moisture no longer appears on the surface. This method of investing the pattern assures a maximum condensation of the investment to form the mold, a smooth hard surface against which to cast, and a maximum degree of mold expansion. Filling the ring may now follow by picking up small portions of the investment mix and depositing them on the rim of the ring and by vibration or by tapping the hand holding the ring against the laboratory bench causing the investment to settle to the bottom. This is repeated, small portions being added at a time until the ring is filled. From twenty to thirty minutes should be allowed for setting of the investment.

Wax Elimination—Wax elimination should take place slowly, at about twenty minutes at low temperature to drive off by evaporation most of the contents of the water of crystallization. About the same length of time is allowed for medium temperature, after which the maximum temperature is allowed until the ring has attained a cherry-red color. Casting time is indicated when the mold chamber shows red when viewed through the sprue hole. The casting should be allowed to cool for at least five minutes before being plunged into water, so as not to interrupt the orderly setting of the gold in the process of solidification.

Finishing—The casting, after having been cleansed and pickled, should be examined through a magnifying glass for the possible presence of nodules. These, if at all present, can readily be removed with small round burs, or chipped off with a small sharp chisel.

If carefully managed throughout, the casting should require little more than fine mounted stones or dull burs, and fine grained paper discs to give the final finish to the restoration. This should by all means be done prior to cementation.

Cementation — Mixing cements is often not given sufficiently careful attention, and frequently is responsible for cement margins. The powder should be incorporated into the liquid in small portions and thoroughly spatulated with each addition. Too thick a mix should be avoided, and the seating of the restoration during cementation should be carried out slowly and with a vibrating motion to prevent air entrapment. When finally seated, the restoration should be tapped two or three times with the automatic mallet and the restoration held under pressure until initial setting of the cement has taken place.

Polishing—The polishing should be done at a subsequent sitting, and should be accomplished with brushes and fine paper discs. Felt wheels tend to destroy the carving, and their use is not recommended.

30 *North Michigan Avenue.*

Unsolicited Manuscripts Are Welcome

"When you have made an observation of value or reached a conclusion concerning the unusual, publish it. Avoid carrying unpublished knowledge to the grave!"—Sir William Osler.

The Cast Banded Acrylic Veneer Crown

ROGER K. STOCKTON, D.D.S., Chicago

DIGEST

1. The cast banded acrylic veneer crown is an improvement on the acrylic crown that is usually made. There is less tooth structure destroyed and the technique is less difficult.

2. The preparation resembles the preparation for the cast banded gold veneer crown. Enough room must be allowed, however, for acrylic bulk on the buccal and occlusal surfaces.

3. A gold cap is constructed exactly as for the cast banded gold veneer crown. Holes are punched or drilled in the gold cap, spaced strategically as the cap allows.

4. The crown is waxed completely with an excess of wax placed on the gingival periphery and the contact areas.

5. The gold cap is masked after investing.

6. The acrylic material is placed on the crown according to the desired shade.

7. After processing, the crown is polished with the gingival periphery finished to a razor edge.

8. The crown is cemented to the tooth.

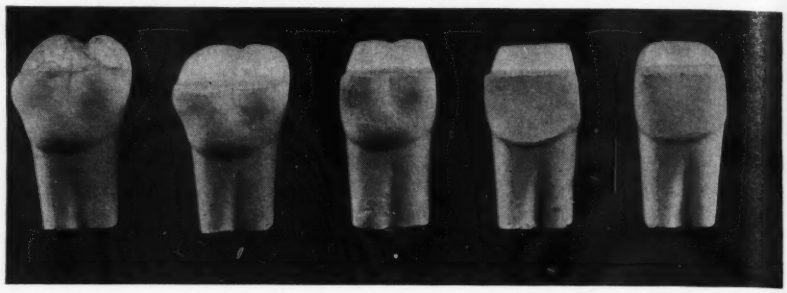


Fig. 1—Successive steps in the preparation.

THE USUAL TECHNIQUE for making an acrylic crown for a posterior tooth has many disadvantages:

1. The preparation necessitates the grinding away of too much tooth structure to obtain a subgingival shoulder and a preparation free from undercuts.
2. Too much time is consumed.
3. A thimble crown must be waxed with several occlusal loops for retention. This waxed crown must then be cast, which is a needless and time-wasting procedure.
4. The pulp may be endangered because of the vast destruction of tooth structure.

The technique suggested here provides a preparation for a posterior tooth to receive a cast banded acrylic veneer crown which is similar to the preparation for a cast banded gold veneer crown.

Technique (Fig. 1)

1. Grind down the occlusal surface to the buccal and lingual planes, with the thickness of base-plate wax allowed for the thickness of the acrylic material.
2. The proximal surfaces are ground, so that gingivo-occlusal convergence is obtained.
3. The buccal and lingual surfaces are ground so as to eliminate undercuts and obtain a slight convergence. Emphasis should be made on the buccal surface. Sufficient room should be allowed for the acrylic material without over-contouring.
4. In finishing the preparation all acute angles are rounded. The preparation is carried midway between the gingival crest and the periodontal membrane.
5. A piece of 24K gold plate, 36 gauge, is used in making the gold cap. The dentimeter measurement around the gingival is obtained to find the length of gold plate needed. The height of the band corresponds to the height of the tallest axial surface plus one-half the buccal-lingual width of the occlusal surface.
6. The band is soldered and the soldered joint is placed to the lingual. This is constructed as shown in Figs. 2, 3, and 4. Special attention should be paid to the festooning of the gingival periphery, and the gingival periphery should extend to a depth one-half the distance between the gingival crest and the periodontal membrane.
7. At this stage the gold cap is perforated by either punching or drilling holes. The holes are spaced strategically according to the construction of the gold cap. If a small punch will not fit conveniently to punch out these holes, the soldered joint is disassembled by heating and the holes may then be punched. The cap is then resoldered and readapted.
8. The gold cap is waxed into occlusion. It is waxed completely to the contour that is desired in the finished acrylic veneer crown. The wax is now removed from the gingival periphery (Fig. 5) and the gold band periphery is sharpened to a razor edge with a Joe Dandy disc. The gingival periphery is then readapted to the tooth. The periphery is rewaxed (Fig. 5) only this time

Fig. 2

Fig. 3

Fig. 4

Figs. 2, 3, and 4—Band soldered; soldered joint placed to lingual. Note festooning of gingival periphery which extends to a depth of one half the distance between the gingival crest and the periodontal membrane. Note perforations in gold cap (Fig. 4).

waxing is done in excess circumferentially to facilitate the processing of the acrylic material. It is easier to process the acrylic material to bulk than to a razor edge. This excess wax also allows bulk for polishing. A small amount of wax should be placed proximally at the contact areas to allow excess for polishing and still provide tight contact.

9. The crown is now ready for processing with the acrylic material:

a) The waxed crown is invested in the lower half of the acrylic flask with the buccal and occlusal surfaces exposed. These surfaces are exposed to allow for subsequent shading, because the buccal and occlusal surfaces are principally exposed to extra-oral view.

b) The top half of the flask is placed and the investment is poured.

c) The flask is inserted in a press and tightened.

d) After the investment has set the wax is eliminated by boiling water. The residual wax, if any, may be eliminated with carbon tetrachloride. The halves of the flask are cooled to prevent rapid polymerization of the monomer when the acrylic material is placed; this affords the operator more time to work with the acrylic material.

e) The gold cap is masked to prevent the refraction of the gold color through the plastic, thereby affecting the desired shade. This masking is accomplished by mixing equal proportions of gingival acrylic powder and titanium di-oxide. This admixture is dissolved in chloroform and painted over the buccal and occlusal portions of the gold cap to produce the necessary opacity.

f) The gingival and occlusal acrylic portions are mixed to the required shade as prescribed by the manufacturer. The monomer is apportioned to each of these two mixtures of polymers. The gingival acrylic portion is placed over the entire surface of the gold cap; it is forced down between the gold cap and the investment. Wet cellophane is placed over the acrylic material; the top half of the flask is placed over the lower half and inserted in the press and water, where it is boiled for a minute. The flask is then removed and separated. The gingival acrylic portion is trimmed with sharp scissors to the depth that the occlusal acrylic portion should be placed in order to obtain the desired shading. The cellophane is again replaced, then the top half of the flask. The whole is placed in boiling water for another minute. The flask is again separated, and if the shading is satisfactory, the acrylic veneer crown is processed by boiling in water for thirty minutes.

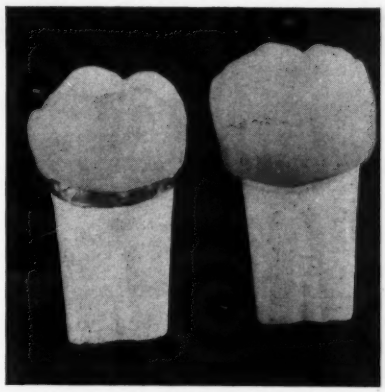


Fig. 5—Wax is removed from gingival periphery of gold cap waxed into occlusion, after which gold band periphery is sharpened to a razor edge. Note rewaxed periphery at right with wax in excess circumferentially to facilitate processing of acrylic material.

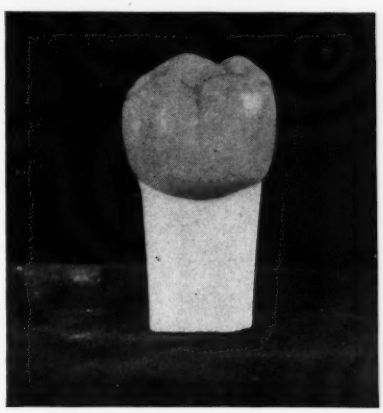


Fig. 6—Crown placed on tooth, ready for cementation.

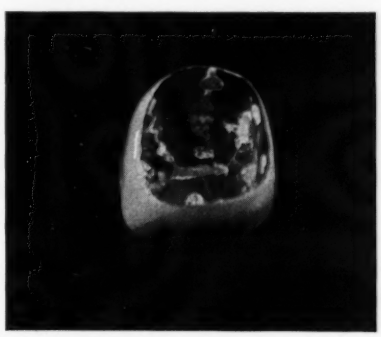


Fig. 7—Perforations in gold cap allow direct cementation of acrylic crown to tooth surface; also afford undercuts and aid in retention.

10. After the flask has cooled, the crown is removed and all investment is

(*Continued on page* 478)

Plastic Prostheses for Lost Anatomic Parts*

DAVID F. HERON, D.D.S., Detroit

DIGEST

A vast opportunity for service to their country in times of emergency is open to dentists in the field of maxillofacial prosthesis. A nose, ear, cheek, eye, or other parts of the face and head may be restored by means of artificial appliances made from materials developed in dentistry.

This service is needed in civilian defense as well as in the everyday life of the civilian population. Gross destruction of soft and hard tissues of the face by such diseases as carcinoma, syphilis and tuberculosis calls for reconstruction by means of plastic or prosthetic surgery. Because of the age of the patient, economic factors, or the patient's general condition, plastic measures are not always advisable. Even when they are, a means is needed of returning the patient to society before such plastic measures may be undertaken. In the case of war casualties, prosthetic restorations afford a means of psychologic rehabilitation, and often, when disfigured persons are unable to undergo further operative treatment, prostheses will serve as permanent restorations. The casualty victim deserves the best in temporary or permanent rehabilitation aids that the skills of surgery, dentistry, and sculpture combined can evolve.

The material used in making these prosthetic restorations must meet certain requirements: It must not be irritating to the sensitive tissues with which it comes in contact; it must closely resemble the skin in color and translucency; it must not change shape; it must be sanitary, and the technique required to construct the appliance must not be too complicated. At the present time acrylic resin would seem to be the material of choice.

IN TIMES OF WAR emergency the services of dentists in the field of maxillofacial surgery are of vital importance. In this war dentistry has an outstanding contribution to make in maxillofacial prosthesis, that branch of the medical service concerned with providing artificial restorations for lost anatomic parts about the face and head.

The development of materials, such as prevulcanized rubber and the acrylic resins, has won for this type of facial reconstruction an important place in surgical prosthetics since the first World War when such restorations were largely unsatisfactory.[1] Many of these prostheses have been made in recent years to restore facial parts lost through disease or injury, and have served satisfactorily as temporary or permanent restorations, before plastic surgery was indicated or when plastic surgery was either impracticable or actually contraindicated.

The significance of this service in wartime is exemplified by the space devoted to it in the *Military Medical Manual*, by the training program in maxillofacial prosthesis which has been developed by the Surgeon General, and by the attention that has been called to the need for training in this service by dentists in the civilian defense program. Reports from England show that not only the faces of combatants but also those of civilians, even children, are mangled in modern warfare, many of them beyond the hope of plastic repair. War industries also exact a toll of injured. Such injuries constitute a present or imminent emergency here.

Dentistry has developed the method of restoring lost facial parts. Because of his familiarity with the anatomy of the jaws and face and his skill in manipulating various materials and appliances, the dentist is particularly fitted for this service. Dentists everywhere who are interested in prosthesis can and should train themselves for this essential service.

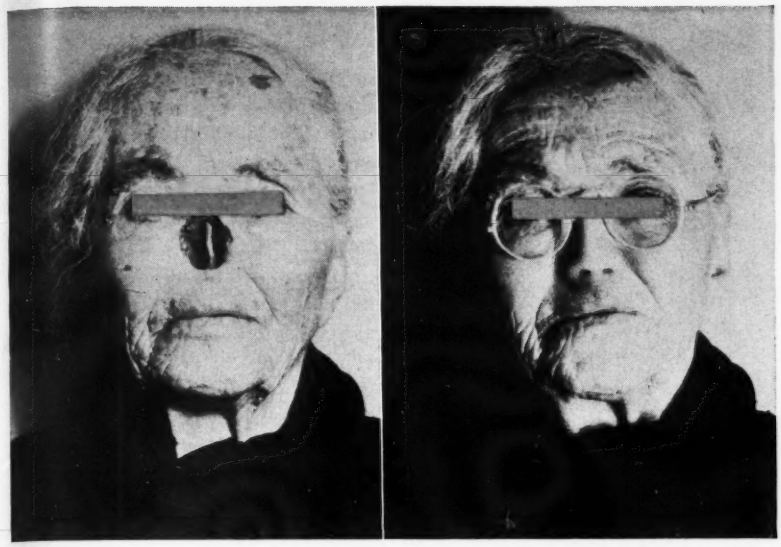
In the nose prostheses illustrated here two different types of materials were used. In the first case the milky exudate of the rubber tree, known commercially as latex, was used as described in a previous article in this magazine.[2] In the other two cases illustrated, one of the acrylic resins advocated by us for the purpose[1] was the material chosen.

Although several investigators expe-

*From the Department of Oral Surgery, Alexander Blain Hospital, Detroit, Michigan.

[1]Munson, F. T. and Heron, D. F.: Facial Reconstruction with Acrylic Resin, Am. J. Surg. (new series) 53:291-295 (August) 1941.

[2]Heron, D. F.: Correction of Anatomic Defects by the Use of Liquid Rubber, DENTAL DIGEST, 46:353-355 (October) 1940.



Figs. 1 and 2—Liquid rubber restoration made for an elderly patient after radical treatment for advanced carcinoma.

available. The advantages of the acrylic restoration in cleansability and in the fact that it does not deteriorate, its light weight, its lifelike color and translucency far outweigh, in my opinion, its less satisfactory texture. There is good reason to believe that with further experiments with the new plastics, a material will be developed that has all the present advantages of acrylic resin and in addition pliability and a better texture.

Nose prostheses of acrylic resin have been made for five patients in the Alexander Blain Hospital and have proved to be satisfactory in esthetic results as well as in comfort and sanitation. In the case of a nose prosthesis the acrylic restoration has the added advantage of aeration, inasmuch as it can be hollowed out fairly thin. The mat-

Figs. 3, 4 and 5—Acrylic resin restoration of a nose. In this patient cancer of the organ was further complicated by tuberculosis.

rimented with acrylic acid derivatives prior to the year 1900, the material came into wide use in the arts and sciences in this country only as recently as 1939, and was made available commercially in 1931. Acrylics is the term applied to the various resins made from polymerized derivatives of acrylic acid, CH_2:CHCOOH, and methacrylic acid, CH_2:C—COOH.

This product, acrylic resin, comes to the dentist in the form of a pink powder, a white powder and a colorless liquid. By gradually blending the powders and using the liquid as a binder, mixing and curing by the same process as is used in the making of a denture, a result is obtained that closely resembles the color of skin. One of the chief objections to the use of liquid rubber was the difficulty in coloring it to resemble skin, although in texture the result was lifelike.

At the present time, with several advantages over liquid rubber, acrylic resin would seem to be the material of choice regardless of whether supplies of the liquid rubber will continue to be ter of expansion and contraction can be allowed for in the technique employed; however, there seems to be a trifle less shrinkage at present in the acrylic resin. The technique for its use as developed with the aid of Mr. John Lang of the dental department is given herewith:

Technique

1. A good impression is obtained of the area to be restored, together with as much of the surrounding tissue as is advisable. The impression is taken preferably with one of the hydrocolloids,

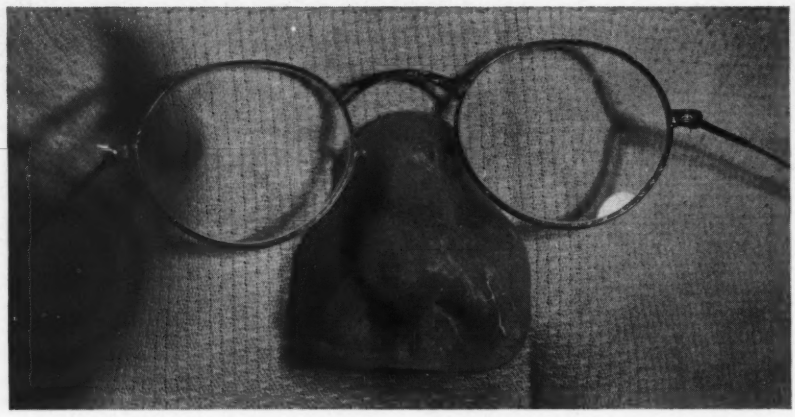
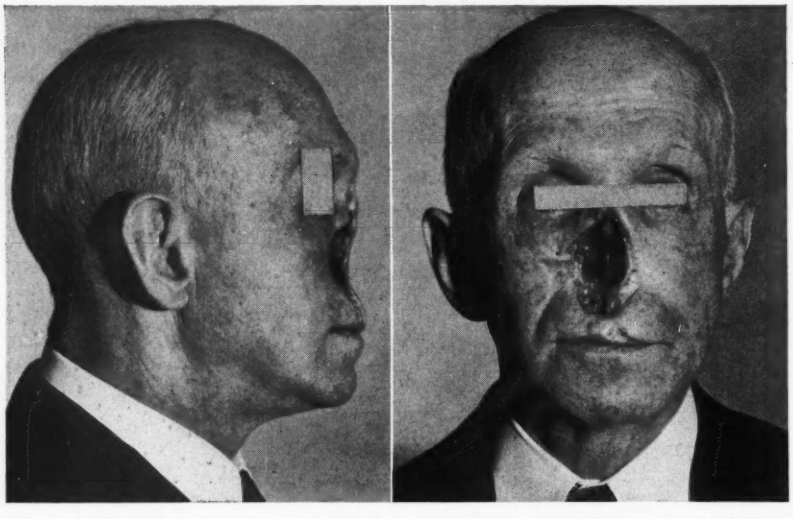
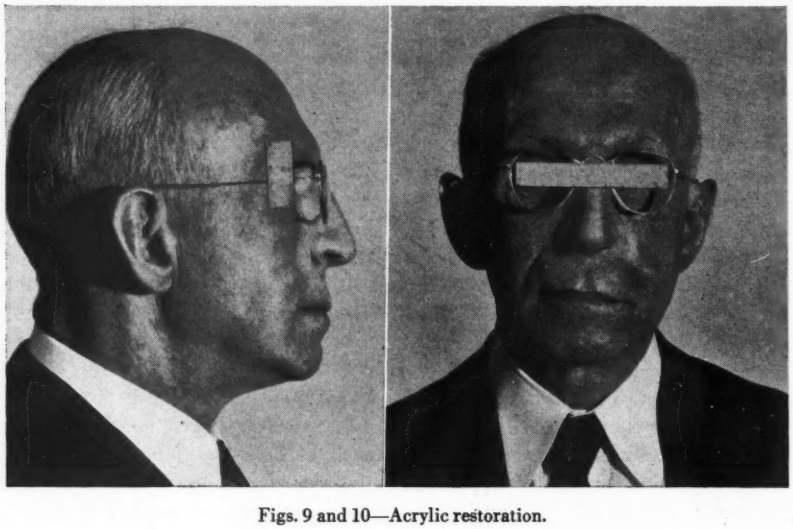


Fig. 6—Artificial nose is retained in place by the shape of the defect and the use of eyeglasses. The acrylic resin nose is hollowed out for better aeration and greater translucency.



Figs. 7 and 8—The problem of a restoration was complicated by the extensive removal of tissue (a good part of the upper lip and an area of the cheek are included) necessitated by well advanced carcinoma.



Figs. 9 and 10—Acrylic restoration.

particularly if undercuts are present.

2. The impression is poured in plaster or artificial stone. The resulting cast is a positive likeness of the area remaining and the adjacent tissues. In a few instances a life mask has been made of the entire face. The missing portion, that is, the part to be restored, is then carved in wax.

In several cases this sculpturing of the new part was facilitated by taking an impression of the nose or ear of another person on whom this anatomic feature had a general resemblance to the one lost by the patient. This impression was also taken in a hydrocolloid material, but this time it was poured in base-plate wax. This wax portion can literally be shelled out. It is then further molded and carved to the esthetic appearance desired and adjusted to the plaster cast.

3. The wax pattern of the feature to be restored is tried on and further adjustments are made to harmonize it with the patient's features.

4. After the wax pattern has been invested in two parts, the wax is melted out, the two parts of the cast are separated, cleansed thoroughly, allowed to dry, and both halves are foiled, the tin foil being molded carefully around the configurations.

5. A rather thick mix of the acrylic resin, of the same consistency as is used in making a denture, is now pressed between the two halves of the plaster cast, care being exercised to see that the mass fills all the undercuts that may be present.

6. The two halves are closed tightly and the acrylic resin is cured by submitting it to either moist or dry heat at a temperature of approximately 250° F., the same process as is required in making a denture of this material.

7. After the curing process is completed, the case is removed from the cast, polished and stippled to simulate the skin of the patient.

8. If the restored part is thick, as in the case of a nose, it may be hollowed out. This provides for aeration and the desired translucency.

Comments

1. Eyeglasses are used to aid in re-

(*Continued on page* 478)

Combined Anatomic and Functional Techniques of Denture Construction

JEROME M. SCHWEITZER, D.D.S., New York City

DIGEST

During the last few years there has been considerable discussion about whether the functional or anatomic technique is the acceptable one in denture construction. In the case report presented here a technique is introduced which combines the good points of both techniques: The case was begun with the anatomic technique on an adaptable instrument, with the use of the facebow, adjustable condyle paths, lateral inclinations, and protrusive bite wax. The aim here is to obtain a curve of Spee that will harmonize with the condylar inclination of the particular case under treatment.

After the curve of Spee is obtained, the models are removed and a functional technique is applied.

This combination of techniques reduces the errors so frequently found in denture construction.

The combined procedure is described and illustrated step-by-step in the report of a clinical case.

A MAN, AGED 73, had a full upper denture and a lower lingual bar (Fig. 1) which had been in position for more than twelve years. The lower anterior teeth, although vital, were extremely abraded. The vertical dimension had closed to such an extent that the vermillion border of the lips was only

Fig. 1—Lower anterior teeth, although still vital, have been severely abraded.

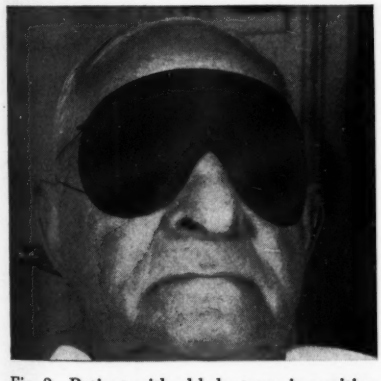


Fig. 2—Patient with old dentures in position before treatment was begun. Vermillion border of lip is barely visible.

slightly visible (Fig. 2). The only natural teeth present in the mouth were the six lower anteriors and the lower left first bicuspid. There were no pulpless teeth present.

Technique

1. A gold inlay was prepared for the lower left first bicuspid on the occlusodistal surface. This inlay was placed in position but not cemented into place.

2. All sharp edges as well as calculus were removed from the teeth.

3. An accurate impression was taken of the lower anterior teeth with plastogum.

4. A metal model was poured.

Fig. 3—Entire first part of technique was by anatomic construction. Upper model being mounted upon instrument by means of a facebow.

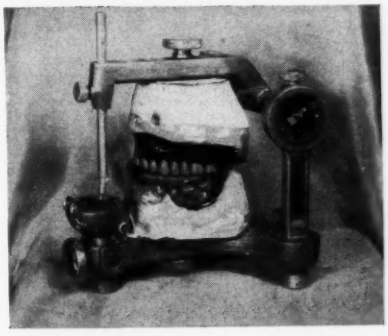


Fig. 4—Sagittal condylar inclinations were adjusted by means of a protrusive bite-wax taken in mouth. Lateral shafts were computed by formula. Incisal platform was set at zero.

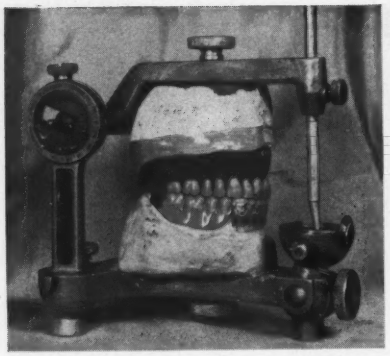
5. An occlusal casting was made in gold to cover the incisal edges of all the remaining teeth. This casting conformed to a 4-inch disc and restored the normal height to the lower remaining teeth.

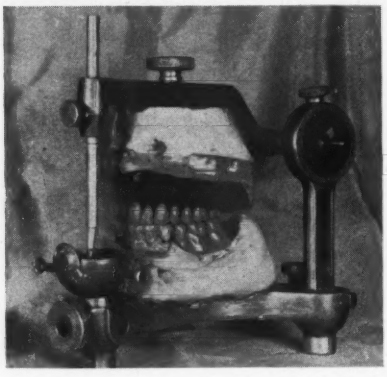
6. The height was built to represent what was assumed to have been the height of the patient's natural incisors, with an allowance of additional height for future grinding or adjusting.

7. The entire labial aspect of this gold incisal casting was removed to permit the introduction of an acrylic material, the color of which would blend with the color of the natural lower teeth.

8. Bent, round wire clasps were constructed for the right cuspid and the left first bicuspid.

9. A definite lug rested in a prepared





Figs. 5 and 6—Lower lingual bar was completed as described in text. Upper denture was not completed at this stage. Functional technique would now be begun.

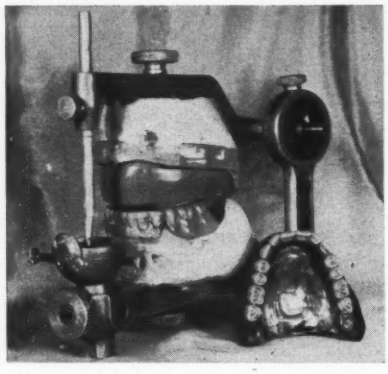


Fig. 7—Vulcanite base made on a duplicate model and seated on the master upper model. Sufficient space was allowed for the modeling compound platform.

lug seat in the gold inlay of the left first bicuspid.

10. The casting was fitted in the mouth. The clasps held it in position.

11. A good plaster impression was taken over the casting.

12. A stone model was poured and the metallic framework of the lower lingual bar was completed.

13. Two small heavy wires were used as shown in Fig. 1 to relieve the saddle

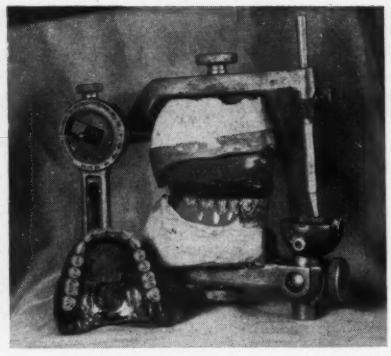


Fig. 8—Modeling compound was added to build up a platform which raised the incisal pin off its platform about 2.5 mm.

Fig. 9—Cases are here shown in the mouth prior to introducing the vulcanite try-in to take functional registration. Lower acrylic portion has not yet been stained.

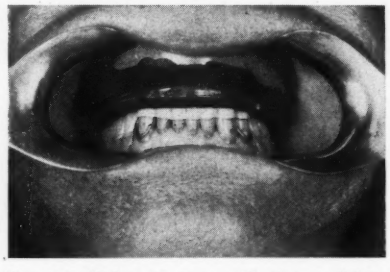


Fig. 10—Vulcanite tray with the modeling compound platform in mouth to obtain functional bite.

pressure. These wires were countersunk into slots prepared for them, so that they did not protrude lingually to cause any annoyance to the tongue. The saddles were prepared in wax.

14. The casting was tried in the mouth. The height of the gold was reduced where necessary and the lingual bar was laid aside until it was further needed to take the bite.

15. A modeling compound, muscle-trimmed upper impression was taken, a plastogum wash being used.

16. A stone model was poured from this impression.

17. A gold base was cast and a bite rim was added to the gold base.

18. The bite was taken directly in the

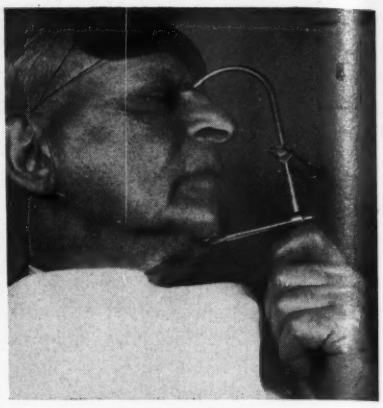


Fig. 11—It is necessary in obtaining functional bite not to reduce vertical dimension more than that of the original set-up. Gauge is used to check the vertical height.

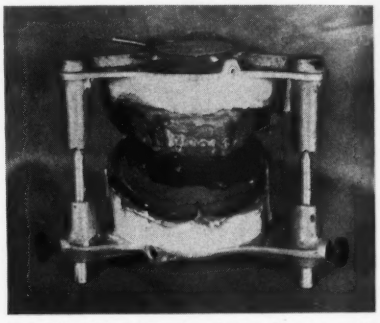


Fig. 12—After functional bite has been obtained, the models are taken off anatomic instrument and transferred to an instrument with only open and close movements. Models are set in centric position.

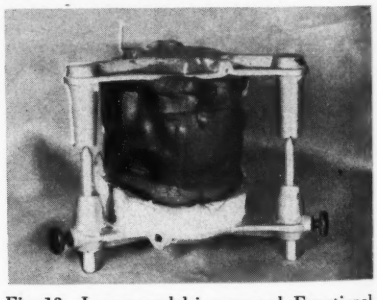


Fig. 13—Lower model is removed. Functional bite is boxed to lower frame and poured in artificial stone.

Fig. 14—When stone has set, the functional counter bite is opened and this is what it looks like. The line running around it was made by the explorer used in the mouth to locate the centric position.

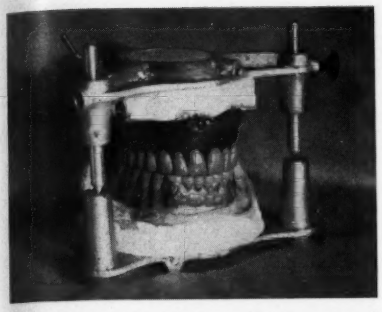


Fig. 15—Functional counter bite is removed from instrument, and in its place, the lower model is substituted. Upper vulcanite tray is removed from upper impression and upper set-up is returned to model. Upper teeth are reset to conform to lower as shown here.

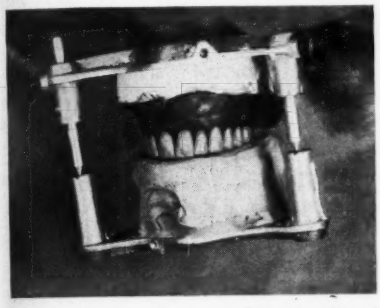


Fig. 16—Functional counter bite is replaced and upper teeth still have some discrepancies which must be further corrected.

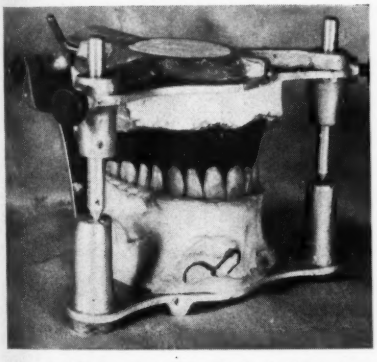


Fig. 17—Upper set-up fits both the lower set-up and the functional counter. Upper teeth are ready for characterizing by means of fillings, inlays, and stains.

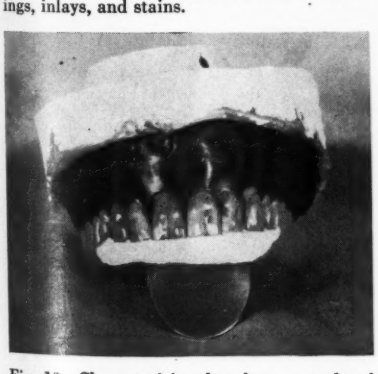


Fig. 18—Characterizing has been completed and teeth have been returned to their plastic index.

mouth by means of the upper and lower bite rims. A face-bow registration was made at the same time.

19. The upper model was mounted upon the upper frame of the Hanau model H articulator by means of this face-bow record (Fig. 3). The lower model was mounted to the upper by means of the bite index. The condylar registrations up to this point were set at zero.

20. The mold, shade, and arrangement of the teeth were decided, and the lower and upper teeth were set up and tried in the mouth for fit and esthetics.

21. A protrusive bite was taken in wax directly in the mouth and transferred to the articulator (Fig. 4).

22. The condylar paths were adjusted to conform to this protrusive bite, and set. The amount of rotation of the lateral shafts were computed by the formula: condylar inclination over 8 plus 12 equal lateral. The teeth were ground in to conform with the registrations of the machine. The teeth were again tried in the mouth for checking.

23. The lower lingual bar was now completed. The saddles were completed in vulcanite and the acrylic portion, which was inlaid in the gold anterior casting, was made of a neutral shade. This acrylic portion would later be stained to conform with the upper and lower teeth (Figs. 5 and 6).

24. The upper case was removed from the articulator and a duplicate upper model was made. A vulcanite base was made on this duplicate model. The vulcanite base was transferred to the original case upon the articulator as shown in Fig. 7. Enough room was allowed between the vulcanite and the lower lingual bar to permit the addition of green modeling compound. This green modeling compound was added to the vulcanite base, not alone to build it up to the former vertical dimension but to raise the former vertical height about 2.5 mm. as shown in Fig. 8 in which the distance that the incisal guidance pin is off the platform will be noticed.

25. The patient at this point is ready to grind in the functional bite directly in the mouth. In Fig. 9 the lower completed lingual bar and the upper try-in are seen tried in the mouth.

26. The upper try-in is replaced by the vulcanite base with the modeling

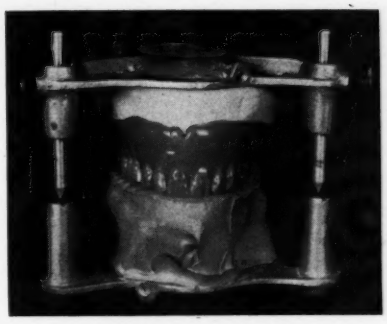


Fig. 19—Upper case shown on models prior to introduction in the mouth.

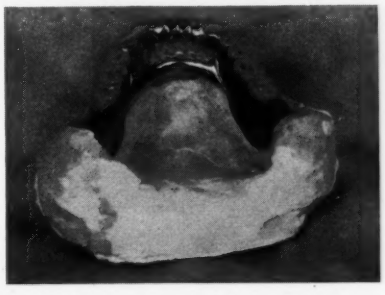


Fig. 20—Lingual aspect of completed lower. Two short break-stress spring wires were countersunk into gold grooves. Acrylic material was carried over incisal edge and stained to harmonize with upper and lower teeth.

compound rim. This compound is evenly heated and the patient is instructed to start the protrusive and lateral movements under the operator's guidance at first and then by himself (Fig. 10). The vertical height is carefully watched as the chew-in continues. The surface of the modeling compound is also watched for interfering points which are removed. A face meter may be employed as shown in Fig. 11 to guard against too great or too little vertical height.

27. When the operator is satisfied with the functional chew-in the rest position is marked by an explorer, which defines a sharp line where the upper compound and the lower teeth meet. This centric position is important to capture, because by it the models are mounted in the next step.

28. The lower lingual bar is returned to the model which has been removed from the adaptable articulator. This lower model is now mounted upon the articulator shown in Fig. 12 which was devised by the late Doctor Milton Rosza. It is simple and useful in this technique. The upper model is also removed from the adaptable articulator and mounted on the Rosza instrument by means of the

Fig. 21

Fig. 22

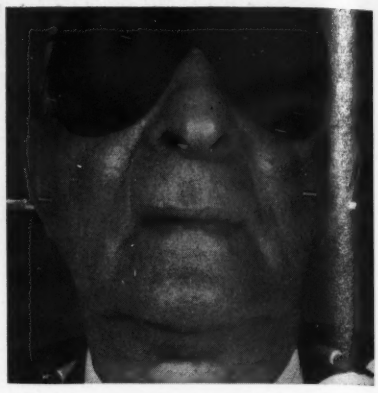


Fig. 24—Vermillion border of lip once again shows as it normally should.

Figs. 21, 22, 23—Restorations in position in mouth. They are shown in centric and in right and left lateral positions.

functional bite. The reason for obtaining the centric position in the mouth is evident.

29. After these models are mounted the lower model is removed. Wax is applied around the functional bite (Fig. 13) and stone is poured directly into it. When the artificial stone has set, the wax is removed and the models are separated. (Fig. 14 shows the functional counter bite. The thin line running around the stone platform is the mark of the explorer, denoting the centric position.)

30. At this stage the lower model with the lingual bar is again substituted for the functional model and the upper setup is placed upon the upper frame of the instrument. The upper teeth have to be rearranged to fit the lower teeth (Fig. 15).

31. When this has been accomplished, the lower model is removed and the functional counter model is placed upon the lower articulator frame as shown in Fig. 16. Further grinding of the upper teeth is now necessary, in order that they fit the lower functional bite.

32. After this grinding has been done (Fig. 17) the upper teeth are ready for indexing and staining. In addition the upper right first bicuspid has been prepared for a mesial-occlusal gold inlay.

33. After the staining has been completed (Fig. 18) the upper denture is finished in acrylic material (Fig. 19).

34. The acrylic portion which has already been completed in the lower lingual bar is stained to match the upper and lower teeth. The acrylic material is carried over the incisal edges so as to show no gold (Fig. 20).

35. The completed cases are inserted in the mouth (Figs. 21, 22, 23). The vermillion border of the lip, it will be noted in Fig. 24, now assumes a normal contour and appearance.

730 *Fifth Avenue.*

Plastic Prostheses for Lost Anatomic Parts

(*Continued from page* 474)

taining the artificial nose on the face.

2. Previously we recommended, in the case of women patients, that a thick makeup foundation be used. With a restoration made of acrylic resin, rouge and face powder were the only cosmetics considered necessary.

3. Whenever possible the dentist who is to make the restoration should work in close harmony with the surgeon. The surgeon bearing in mind the need for prosthesis, can bring the injured parts together in such a way that retention will be provided for the appliance and finishing lines will occur in the shadows of the face where they will be least noticeable. The dentist, in planning the restoration, should utilize all the natural advantages offered by the shape of the defect to secure maximum retention.

2201 *Jefferson Avenue, East.*

The Cast Banded Acrylic Veneer Crown

(*Continued from page* 471)

cleaned away. The excess gingival acrylic portion is polished down to a razor edge exactly as is done for a cast banded gold veneer crown. The crown is completely polished with the final polish produced with cold water and a chamois wheel. The crown is placed in water until the patient arrives.

11. The crown is placed on the tooth and if the contact areas are satisfactory, it is ready for cementation (Fig. 6). The perforations placed in the gold cap (Fig. 7) allow direct cementation of the acrylic crown to the tooth surface. The perforations in the gold cap also afford undercuts and aid in the retention of the acrylic crown to the gold cap.

Advantages

This cast banded acrylic veneer crown affords (1) a correct gingival adaptation with a razor-edge periphery equal to that of the gold crown; (2) correct coronal contour; (3) a desirable shade simulating the color of the approximating teeth; (4) correct contact areas; (5) enough acrylic bulk to resist the stresses of mastication; (6) minimum destruction of tooth structure in the preparation; (7) a possible means for another type of bridge retainer.

4765 *North Lincoln Avenue.*

The Editor's Page

GERIATRICS IS that branch of medical science and art which is concerned with the care of the aged. Heretofore the aged have generally suffered from medical neglect and from the placebo of resignation and rationalization in which their ailments were disposed of as the mere "expressions of old age." Even among civilizations of ancestor worshippers the aged have been looked upon as the economically worthless and as liabilities to the tribe. The young, on the other hand, being regarded everywhere as economically valuable, the necessity of increasing their life span is understood; consequently the specialty of pediatrics has expanded more than that of geriatrics.

At the present time it is estimated that there are more than 9 million persons over 65 years of age in the United States. This represents an increase of 35 per cent in the number of aged recorded in the 1930 census. The aged are now coming into their own. With the war effort many of them are finding work to do and others who had retired are being returned to gainful employment. This, therefore, is an auspicious time to give more attention to geriatrics. A recent book[1] on the subject covers the whole ground effectively. The chapter concerning the teeth of the aged by Herschel S. Glick, D.D.S. of Los Angeles is extremely well treated. The dental aspects of geriatrics should receive more consideration but we trust not to the point that the coiners of words will inflict on us a new specialty of geriadontics or geriadontia. Dentistry which is a specialty of medicine already has too many specialties within its own framework.

Glick wisely points out that along with changes in all tissues and organs as a result of the ageing process the teeth are likewise affected. He puts it in these words:

"Along with all the rest of the ageing tissues and organs, teeth grow old. They become eroded, abraded, and diseased. They fracture, elongate, and shift about into malocclusion. Bone disintegrates. Bridges, crowns, fillings, and dentures, along with the remaining teeth, become loose and unserviceable, with a resultant lack of masticating ability. With all the recent forward strides in preventive and restorative dentistry, this profession still cannot cope successfully with the ravages of time and old age.

"At the outset it is well to remember always that those of advanced years are delicate. Their resistance is low and the threshold of pain is low. The virility that enables one to surmount discomfort and pain patiently and courageously is gone. What might be attempted in the mouths of younger adults with every prospect of success is doomed to failure in the mouths of the old. Extensive restorations cannot be tolerated, for the discomfort involved during and after the procedure usually far outweighs the benefits. Conservative treatment, aimed always at cleanliness and comfort, must be the watchword."

This advice of Glick's is sensible. Many dentists could save themselves grief by heeding this advice and not being too prompt to place dentures in the mouths of the aged who have gone edentulous over a long period. Glick states the case well when he says, "... in old age, when a man or woman is failing and feeble, it is generally too late to restore mastication with dentures. Bone has disappeared as a result of trauma, infection, senility, or all three, which leaves a very poor foundation on which to build. Mucous membrane has become thin, taut, and withered. The trouble, pain, and necessary facility for adapting oneself to new teeth are too much for old nerves and bodies. Annoyance, even though minor, is magnified by restricted interests and activities and simply will not be borne. It is obvious that these folks would have been vastly better off if they had anticipated and had had dentures made years sooner. In most cases this would have meant the difference between comparative comfort for the rest of one's life and no comfort at all. Teeth can be retained too long."

On one point we may be in some disagreement with Glick. In reference to focal infection, he stresses the opinion that many old persons "develop a surprising resistance or tolerance to oral infection. Conditions which in younger mouths would lead to pronounced symptoms of absorption sometimes have no apparent effect on health in the aged. Not much is known of the causes, but old people often do build up some sort of immunity." This opinion is contrary to that held by most clinicians who feel that latent focal infections can be kept under control in vigorous youth and in the middle virile years but are much more dangerous in the later decades when resistance is lowered and the patient is on the threshold of the degenerative closing phase.

The profession is indebted to Herschel Glick for his intelligent discussion of the dental aspect of the story of geriatrics. In this discussion he did not forget to explode the myth of "the third set of teeth."

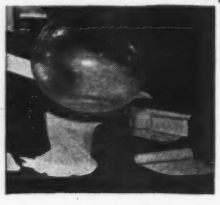
---

[1]Thewlis, M. W.: The Care of the Aged (Geriatrics), Fourth Edition, Thoroughly Revised, St. Louis, The C. V. Mosby Company, 1942.

When You Ask For The *HYGIENIC* Brand

Hygienic Dental Stopping

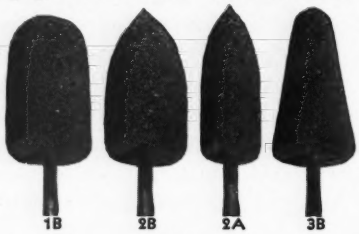
A quality product made by an entirely new formula that is as superior to ordinary stopping as Hygienic Pure Latex Dam is to old style dam. Hygienic Stopping is available in white, pink and tan. 1½ oz. box 50c; 4 oz. bottle $1.00.



Hygienic pure latex Dental Dam

Stronger, tougher, harder to tear and age-resisting. Supply is limited. Help conserve it.

Hygienic CC Trimmers



They cut all denture materials, yet do not scratch teeth. Trim acrylics without heating or clogging. Equally good for rubber. 40c each, 6 for $2.25. (2A, 35c each.)

Hygienic DENTAL Vulcanite

unexcelled for strength, color and packing qualities.

Dr. Dietrich's Inlay Impression Material

Has tough flow that forces tissue back, thus giving an accurate impression of the gingival margin. Draws all undercuts and bell crowns without distortion. Box 12 sticks $2.00.

See your dental dealer or write us for literature

You are assured of uniform quality and uniform results

The Hygienic Dental Rubber Company
AKRON, OHIO

HYGIENIC DENTAL PRODUCTS

LEE SMITH CERTIFIED IMPRESSION COMPOUND

INSURES BETTER IMPRESSIONS

Lee Smith Certified Compound is an all-purpose impression material highly efficient in general prosthetic work and a variety of other techniques. It requires less kneading to give you smoother texture for greater detail and its flaming and trimming qualities are unsurpassed. Your choice of convenient shaped cakes, ½ pound to the box . . . or tracing stick form, 15 sticks to the box.

Certified to surpass A. D. A. Spec. No. 3

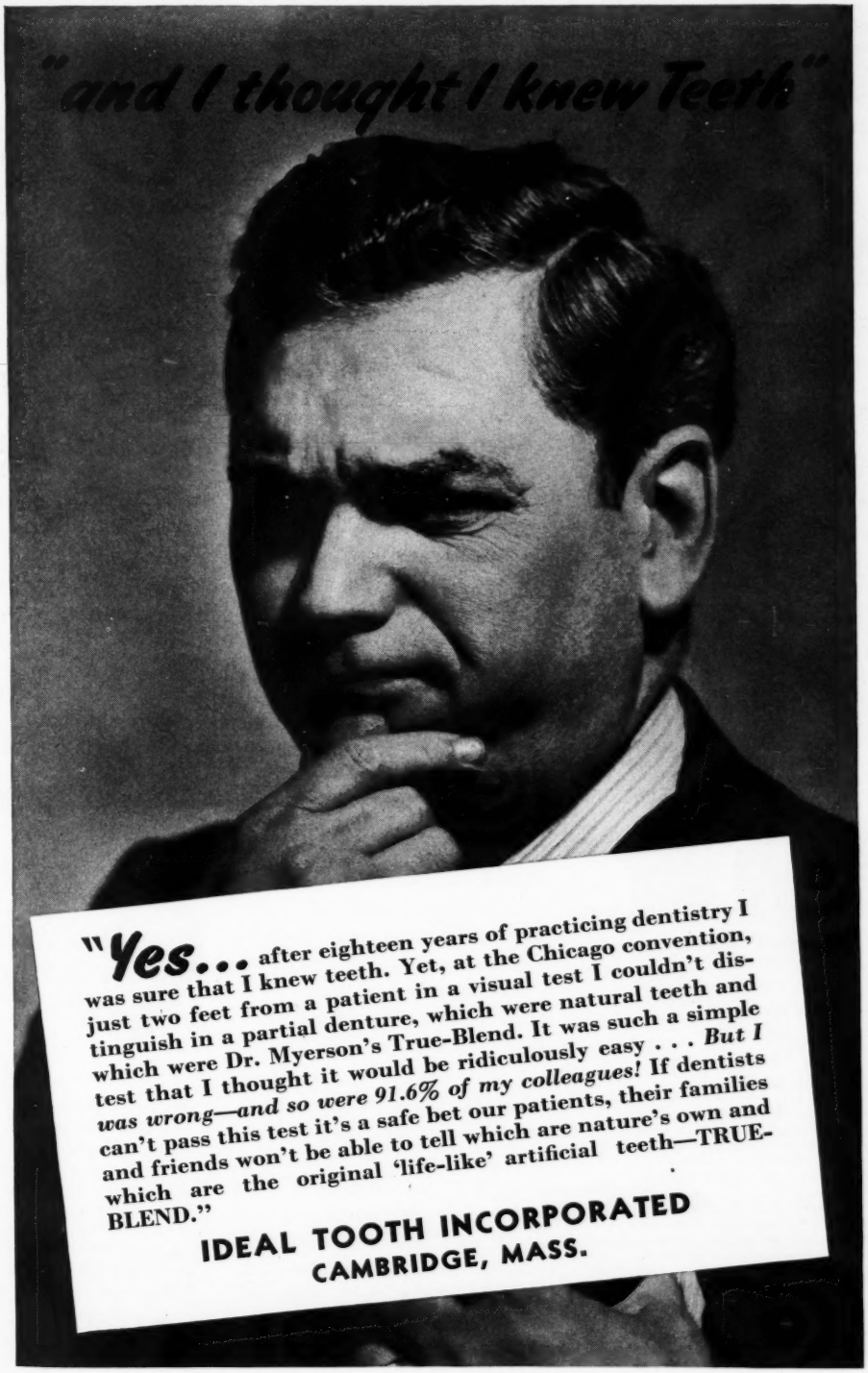
LEE S. SMITH & SON MFG. COMPANY 7325 PENN AVENUE PITTSBURGH, PENNA.

Contra-Angles

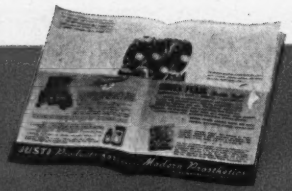
Advertising Dentists Not Wanted . . .

OUT IN Washington state an advertising dentist made an application for commission in the Army. He was conclusively turned down by the Medical Officer Recruitment Board with this straightforward statement: "A recent directive from the office of the surgeon general has stated that advertising dentists and employees of these dentists are not acceptable in the Dental Corps of the Army of the United States." The newspaper which championed the case of the advertising dentist expressed its indignation by commenting that this action on the part of the Army was "outrageous and discriminatory." Is it so?

Most advertisers are quacks. They run contrary to the code of ethics of all dental associations and contrary to the statutes of many states. They frequently misrepresent their wares; they promise things that they cannot deliver at prices that are impossible. Perhaps here and there in the country there is an honest advertiser. Those who have worked for advertisers and managed to escape to ethical practice are unanimous in their condemnation that advertisers in general are a shady lot. Those who follow the career of advertising dentists are likely to be people who run contrary to the spirit of ethics and often contrary to the letter of the law. They do not, therefore, have the qualifications for officer material. They do not have the group spirit, the esprit de corps, the stuff that it takes to share experiences. Wherever advertisers are found, they are lone wolves and are not accepted by their colleagues. To transfer such persons to the Army where they have to associate with other dental officers whose way of life they have not practiced in civilian rôles would be to cre-


"and I thought I knew Teeth"
"Yes... after eighteen years of practicing dentistry I was sure that I knew teeth. Yet, at the Chicago convention, just two feet from a patient in a visual test I couldn't distinguish in a partial denture, which were natural teeth and which were Dr. Myerson's True-Blend. It was such a simple test that I thought it would be ridiculously easy . . . But I was wrong—and so were 91.6% of my colleagues! If dentists can't pass this test it's a safe bet our patients, their families and friends won't be able to tell which are nature's own and which are the original 'life-like' artificial teeth—TRUE-BLEND."
IDEAL TOOTH INCORPORATED
CAMBRIDGE, MASS.

For interesting uses for
- DENTA PEARL TEETH
- ACRYNAMEL
- ACRYNAMEL STAINS
- ACRYNAMEL ACCESSORIES
- IMPRESSION-AC



Look for JUSTI Advertising in:
ORAL HYGIENE (October issue)
PROOFS (October issue)

For useful technical information and **Justi-facts** No. IX

Look for JUSTI'S new technic sheet in the October issue of **DENTAL SURVEY** and **DENTAL LABORATORY REVIEW**
(Back copies are available on request)

H. D. JUSTI & SON, Inc., *Reliable Dental Products Since 1864*, PHILADELPHIA, PA.

Are you doing your part by buying WAR BONDS AND STAMPS?

Alpha-Perles

Containing Chlorophyllin compound,* biologically standardized Vitamin D concentrate, together with a proper balance of Calcium, Phosphorous and Colloidol Iron, ALPHA PERLES is beneficial and many times corrective when prescribed as a supplementary diet.

Alpha Perles are indicated for pregnant and lactating mothers to meet the demands for an abundant supply of calcium, phosphorous and iron; provides essential elements necessary to the building and proper maintenance of healthy tooth structure.

Simple to take, readily assimilable, Alpha Perles—the *medicinal food*, overcomes dietary deficiencies. Write today for complete literature and clinical evidence.

HARRY J. BOSWORTH COMPANY
1315 S. MICHIGAN AVENUE · CHICAGO

ate an intolerable situation for all. The advertiser would find himself a pariah within the ranks, an annoyance to others, and an unhappy fellow himself.

It is true that the advertiser holds a state license to practice. It may be true that some advertisers are fairly well qualified to practice dentistry. But the advertisers' deficiency is in higher values and what they lack is exactly the quality that the Army expects in its officers. The Army dental officer is not commissioned solely on the basis of his ability to practice dentistry. He must have demonstrated his qualities of leadership and initiative with sound judgment; respect for authority and ability to command respect; his acceptance of the rules. A man who in the independence of his civilian activities had not adhered to the mores of his class, had not earned the respect of his colleagues, had done nothing to improve his profession but had been at odds with all its formal codes and informal standards—such a man could hardly offer the expectation of fulfilling the exacting discipline of Army life.

Another Western . . .

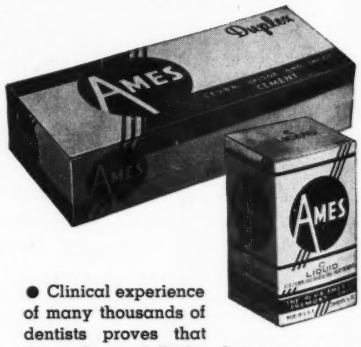
This is Western story month. This one concerns a mythical shortage of dentists in Vancouver, Washington. The *Portland Oregonian* carried the account of the experiences of a Mr. A and a Mr. B: It seems that "a Mr. A was dated with a well known local dentist, but when his hour came, Mr. B walked into the dental office."

" 'You're not Mr. A, are you?' the dentist asked. 'No,' replied Mr. B, 'but he's my friend and he said I could have his date.'

"Further conversation revealed that Mr. B had paid Mr. A $4 for the privilege of climbing into the local dentist's chair."

Now, disregard the nostalgic-sounding A's and B's which suggest high school algebra (assuming that anyone ever had nostalgia for algebra). Yarns, such as this, which suggest that people are paying premiums for dental appointments, are undermining to morale. Next I suppose someone will be spread-

AMES



● Clinical experience of many thousands of dentists proves that Ames Crown & Bridge Cement possesses superior toughness, freedom from chipping and flaking, greater ability to withstand shock and lateral stress, and greater retention to tooth and metal surfaces. These are priceless advantages to the profession and the patient. The W. V-B. Ames Co., Fremont, Ohio.

DENTAL CEMENTS

Write for Free Booklet

COLOR CAMOUFLAGE

...as important in dentures as in military tactics

CAMOUFLAGE experts know that *blending with the background* is the best way to confuse the eye of the enemy, and keep important objects unobserved.

It's much the same with dentures. Coloration of each mouth should *show through*—and does show through when you use *Lucitone. Lucitone's* texture is mottled—not solid. Translucent—not opaque. The result is a true life-like quality in every *Lucitone* denture, admired by the dentist and appreciated by his patients.

Du Pont and Caulk control *Lucitone* color as closely as they watch *Lucitone* purity. You can have the utmost confidence in every unit.

DU PONT

Lucitone

TRADE MARK

METHYL METHACRYLATE RESIN

DENTURE MATERIAL

FOR MODERN MATERIALS CALL ON Caulk MILFORD, DELAWARE

ONCE your north window may have given you enough light for general illumination.

But today you are handling the patients of other dentists as well as your own. Before all your work is done the only light coming in that north window is from the North Star.

Now you need that Castle "G-V" Light you have been thinking of getting, to match up your office light to the almost perfect intra-oral illumination of your Castle "T-V" Light.

Fortunately, you can still get a Castle "G-V" promptly . . . so place your order now. Don't let the pressure of work put it off.

The Castle "G.V" Light—bathes the whole office in soft, indirect, shadow-free radiance while providing ideal illumination in the vital six-foot circle where you do your work. With the Castle "T-V", it gives you light that is properly proportioned, inside and outside the mouth, to keep your eyes fresh.

WILMOT CASTLE COMPANY, 1123 University Ave., Rochester, N. Y.

CASTLE LIGHTS

IF YOU ENTER MILITARY SERVICE—

your DENTAL DIGEST subscription will be continued *without charge* for the duration.

But this can only be done if you send us your military address *and your old address.*

And, if the magazine is to continue to follow you, it will of course be necessary to keep us posted about address changes.

In all cases, the former address should be given so as to identify your mailing-list stencil.

THE DENTAL DIGEST

1005 Liberty Ave. Pittsburgh, Pa.

ing the fiction that there is a "Black Market" for dental services in which patients go in the dark of the night to have dental services performed so as to escape the eagle-eye of a federal agent watching somewhere to see whether you are receiving your proper quantity of inlays or extractions. And maybe after that we will hear that there is a ceiling placed on dental fees and priority lists have been established for persons who can receive the services of dentists. Such rulings would not be much sillier than some that are coming out of Washington City.

There has undoubtedly been some upswing in dental practice and some dentists have had to work a little harder and a little longer for new patients who have money to spend or for a few more patients whose former dentists have gone into Service. But there is still nothing like a bull market for dental care —except that which is handed out by some newspapers.

New Word Department . . .

It has taken me a good many years to find out what the word is to describe the condition that many patients present—the inability to chew their food. I did not know it until the other day, but they are suffering from *amasesis.*

Recognition for British Dentistry . . .

Not many of us here in the United States get very excited about the announcement of an investiture ceremony in Buckingham Palace. Although we do not go in for the Order of the Bath, we do have our own medieval ceremonies—those of our lodges, fraternities, and some forms of dental societies. When the King of England bestows an ancient honor on a dental officer, it does make interesting news to us here in the United States. At the time of his retirement as the Director of the Army Dental Service, Major General D. Clewer was "invested with the Insignia of a Companion of the Military Division of the Most Honourable Order of the Bath."

A significant observation we might make here is that the head of the British Army Dental Service, which is not so large as our Army Dental Corps, is a Major General. Our own Army Dental

Will You Help
A Courageous Fellow Dentist?

THE DENTAL DIGEST wants to help a brave dentist by urging that you buy from him something that you would likely be buying anyway — magazines for your reception-room table.

Doctor Russell Panzica has been ill, and unable to practice dentistry for a long time. A limp right leg and a numb left hand—think what that would mean to you.

With rare courage, he has been earning an income for his wife and two-year-old boy. "I will see it through—come what may," he says. Doctor Panzica is selling *Reader's Digest* and *Coronet* subscriptions. You can help him "see it through" by taking a few minutes to send him your own subscriptions, at publishers' regular rates:

The Reader's Digest: $3 yearly; $5 for two years. Gift subscriptions, for boys in military service, are only $1.50 each.

Coronet: $3 yearly; $6 for two years. Special: $1 for 6 months.

Esquire: $5.00 yearly.

You can also include subscriptions for any other magazines.

Please make your checks payable to the magazines themselves, but send to

Russell Panzica, D. D. S.
717 Seventh St.
Buffalo, N. Y.

Corps with more than 6000 officers should also have a Major General and perhaps a couple of Brigadier Generals as assistants.

Another Item . . .

The same issue of the British *Dental Gazette* which carried the investiture story outlined a comprehensive course of instruction offered to British Dental Corps officers. Here it is:

SUBJECT A.
Non-Battle Injuries

Maxillo-facial Anatomy. Causes. Degrees of Displacement. Signs and Symptoms. Teeth in Fracture Line. Radiographs. Physiology of Bone Repair. Field Dental Equipment. First Aid at M.D.S. Preliminary Treatment at C.C.S. Interdental Wiring Technique. Treatment at General Hospital. Design, Construction, Application of Appliances. Advanced Techniques. Study of Case Histories and Radiographs.

SUBJECT B.
Battle Injuries

Historical Review, 1914-1940. High-velocity Missiles. Impact Effects: Glancing, Penetrating, Destructive. Stereoscopic Photographs. Local and General Effects. First Aid at M.D.S. or C.C.S. Cooperation of Surgeon. Preliminary treatment at C.C.S. Treatment at General Hospital. Design, Construction. Application of Appliances for Hard and Soft Tissue Losses. Specialized Treatment by Maxillo-facial Team. Special Appliances. Study of Case Histories, Photographs, X-rays, Models and Casts.

ADDITIONAL

Study of any Jaw Injury under Treatment at Dental Centre, Cambridge Hospital. Acute Ulcerative Gingivitis.

SUBJECT C.
Military and Allied Subjects

Discipline—Customs of the Service. Organization, R.A.M.C. and A.C.C. History—Dentistry in the Army. Organization in the Field. Dental Officer in the Field. Map Reading. Field Messages. Anti-gas Defence.

SUBJECT D.
Military and Allied Subjects

Squad Drill. Stretcher Drill. Anti-gas Equipment. Gas Chamber. Pistol Training. Small Arms and Grenades—Safety Precautions.

SUBJECT E.
Administration

Organization of a Dental Centre. Accounting for Medical Equipment. Correspondence and Office Routine. Military Law.

Officers are selected and attend the Courses under instructions issued by the War Office (A.M.D. 6).

Twenty-five Army Dental Corps officers attend each fortnight and arrangements are also made for the attachment of a limited number of officers of the Royal Air Force Dental Branch and of the Dominion and Allied Dental Services.

All Army Dental Corps officers attend the course before being posted to a field medical unit or drafted overseas.

(*Continued on page* 487)

A new *concept* of dental treatment *for the patient and the dentist*

Patients who have experienced dental treatment with the aid of McKesson analgesia have learned that dentistry need not be a dreaded, painful experience. In the dental chair, they are calm, relaxed, cooperative, providing the ideal operating condition which conserves the operator's time and energy.

The McKesson Easor reduces the technique of gas analgesia to its simplest terms. The simple positive regulating mechanism is adjusted instantly. The flow of gas to the nasal hood is controlled by the patient. The dosage control device limits the gas flow to the analgesia stage. The direct oxygen button permits a flow of pure oxygen to reach the patient instantly.

You can appreciate the value of McKesson analgesia only when you understand how the Easor operates, and what it will do for you in building patient confidence and conserving your time and energy. The coupon on page 493 will bring you complete information.

McKesson Appliance Co.
Toledo, Ohio

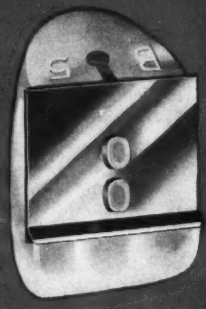
DESIGNED FROM START TO FINISH AS *Bridge Teeth*

★ Steele's New Hue facings do not have the definite collar that has persisted so long in bridge teeth as a carry-over from denture-tooth design. Moreover, these new facings have much fuller mesial and distal contours in the proximal area — thereby narrowing the interdental spaces to reasonable bridge-tooth proportions. These improvements in bridge-tooth design, together with the use of character markings that produce sharp, sparkling highlights, make possible restorations so natural as to defy detection!

THE COLUMBUS DENTAL MFG. CO., COLUMBUS, OHIO

Steele's

NEW HUE FACINGS



We strongly recommend the use of Steele's backings specially designed for these porcelain incisal facings. To a major extent the strength and serviceability of Steele's New Hue facings depend on the accurate fit of the metal support.

"Teeth and Torpedoes":

An item in a New York newspaper mentions that two thirds of the men who wear "false" teeth lose them in the shuffle if they are torpedoed at sea. With the violent nature of warfare, bombings, torpedoings, shellings, the crashing of aircraft, it is easy to see how any dental appliance might become dislodged and be lost. It is serious enough to lose a removable appliance, but the most serious danger lies in these objects becoming stuck in the air passages or aspirated into the lung. When dentists are preparing men for military service, they should keep in mind to put as few removable and dislodgeable restorations in the mouth as possible.

"Get Tough!"

GET TOUGH is the name of a book that gave me nightmares. It is the book of training instruction for commandos. In good old Anglo-Saxon it gives advice to young men in the armed forces who are being trained for a career of attacking the vitals and the vulnerables of our enemies.

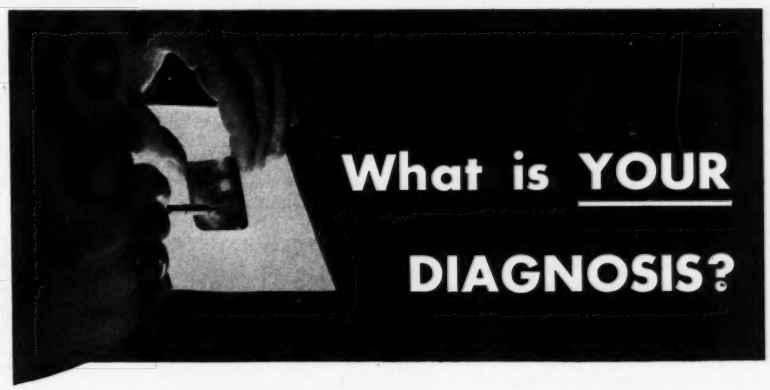
Speaking of Anglo-Saxon, I am reminded of the King Arthur legends and such medieval tales of valor and gallantry when Knighthood was in flower when knights fought by a code and if an adversary dropped his lance, he was given a gentlemanly chance to recover. But our adversaries don't fight by codes, so we can't either. They are masters of the sneak attack, the strangling and starving of women and children, and the precise bombing of hospitals.

"We Did It Before . . ."

You fill out the words of this popular song. The other day a newspaper cartoonist showed two oldsters bordering on the 45-year military age limit. One asked, "What is your position in the draft?" The other replied, "I don't know. I haven't seen what General Hershey said today in the papers."

We are told that before the end of the year married men will be drafted or half the men between 18 and 45 will be in service. But in the face of all this, commissions in the Dental Corps are closed. We hear about the desperate need of

In your ORAL HYGIENE this month



This new ORAL HYGIENE department, "What is *Your* Diagnosis?" appeared last month for the first time, and appears again this month. Conducted by the distinguished Doctor George R. Warner of Denver, it presents three cases monthly for diagnosis. The solutions are printed on the other side of the sheet. You aren't supposed to look until you have diagnosed each case yourself.

"Action at Saint Louis," in a few swift paragraphs, tells what happened at the American Dental Association's meeting month before last.

"A Guide for Dentists Who Enter Army Service," is just that. It was written especially for ORAL HYGIENE by an Army officer.

Doctor Walter C. McBride reveals the pitfalls in "Contract Dentistry for Children."

"Your War Damage Protection" was written for ORAL HYGIENE by an insurance counselor, Thomas J. Byrne, Jr., so as to provide you with concise data on this highly important topic.

One state now recognizes a dentist's right to withhold certain professional information when giving testimony in court. Jay Voorhies tells about it in "New York State Law Revised to Protect Dentists." Maybe your own state needs a similar law.

Dentists are being prepared for war service in Chicago this month; the project is described in "An Institute of War Medicine and Surgery for Dentists."

Doctor Swanish's department, "This is *Your* Business," tells why, "to protect himself against the withering away of his practice, the dentist should constantly keep his finger on the pulse of changes in political and economic institutions."

And also, in October ORAL HYGIENE, the popular departments, "Ask ORAL HYGIENE," "Technique of the Month," "Military News," "Editorial Comment," "Dentists in the News," "Laffodontia," and "The Corner."

OCTOBER

Oral Hygiene

dentists to care for the military personnel but we find that they can't get commissions even if they want to enter the service of the Army of the United States. What is going to happen to the dentists who are eligible for military service, which includes all those under 45? How many of them are going to be inducted as privates? We did it before, in the days of 1917-1918. There were hundreds of dentists in the Army as privates functioning in non-dental capacities. We did it just recently when the present preparedness program got under way within the last couple of years. Several hundred dentists were inducted as privates under the Selective Service System. The papers are full of the talk of the conservation of manpower, the proper distribution of skills. It doesn't take an efficiency expert to observe that a dentist is going to function best in the Dental Corps rather than as the operator of a tank or as a signalman, or as a foot soldier. "We did it before . . ." Are we to do it again?—E. J. R.

Dermatologic Lesions of the Mouth

(An Abstract)

Eller, J. J.: The New York Journal of Dentistry, 12:14 (January) 1942.

ORAL LESIONS are sometimes the first and only manifestations of a generalized infection. Embryologically the skin and oral mucosa are derived from a common ectodermic origin; therefore, one can expect to find oral lesions in patients with certain dermatoses. Lesions of the oral mucosa, however, are often difficult to diagnose on first examination, because they are somewhat modified by such additional factors as moisture, heat, traumatism, and bacteria which are always present in the mouth. The dentist is not expected to make a definite diagnosis but he should be sufficiently capable in diagnosis to be able to determine whether the oral lesions are within his realm of practice; and if not, he will direct such patients to specialists for early diagnosis and appropriate therapy.

Oral Lesions Antedating Systemic Diseases—Many serious and fatal systemic diseases present their first visible evidence in the mouth. The dentist, for example, is often the first to be consulted by patients with oral manifestations of such diseases as pemphigus, lichen planus, pernicious anemia, agranulocytic angina and leukemia.

Oral Lesions from Drugs—Many drugs may give rise to mouth lesions in sensitized persons. The commonest of these drugs are mercury, bismuth, and arsphenamine; others are the antipyrin group, the barbital group, the salicylates, and the halogen groups. The lesions produced by these drugs may become secondarily infected with Vincent's organisms and so confuse the diagnosis.

Various Causes—(1) oral lesions found among workers in chemicals; (2) *Oral Lesions* from oral lesions in

SUPPORTING BAR
for ACRYLIC BRIDGES
JELENKO GOLD
Provides Maximum Bond between the Bar and the Acrylic—
Eliminates All Causes of Chipping and Cracking in the Acrylic.
Made in 13Ga., 14Ga., 15Ga. in 1 Foot Lengths
Gauge based on round part of the wire, exclusive of protrusions
per Dwt. $2.15
from Your Dealer
Literature and Physical Properties on request.
ROUND FORM provides maximum resistance to shear and torsion in minimum bulk.
BONDING PROTRUSIONS—4 rows of lug-like grips rise from the round bar in easy obtuse angles and are staggered in alternate rows. They anchor the acrylic immovably against occlusal and torsional forces.
NO SHARP CORNERS that induce stresses which crack the acrylic and loosen the bond.
NO PERFORATIONS to weaken the bar.
SMALL COMPACT FORM allows greater bulk of acrylic—stronger teeth; controlled shading; no shadow of the bar.
EASY TO CONTOUR with regular round wire pliers.
3 SIZES TO MEET ALL CONDITIONS—Made in 13, 14 and 15 ga. A size for small, thin teeth and large thick ones.
J. F. JELENKO & Co., Inc.
Manufacturers of Dental Golds and Specialties
136 West 52nd Street
New York, U.S.A.

specific diseases with chronic infectious granuloma; (3) tuberculosis of the oral mucosa which may appear clinically as lupus vulgaris, tuberculosis ulcerosa, or tuberculosis collaquitiva; (4) oral lesions due to yeast infections, the most common or which is "thrush" or "white mouth"; (5) oral lesions due to extension from skin lesions; (6) oral lesions associated with genital lesions; (7) Vincent's infection; (7) lesions incident to pregnancy, such as menstrual herpes, aphthous stomatitis, increased salivation; menstrual toothache; gingivitis gravidarum; (8) diseases of the tongue, of which there are many; (9) cysts of the oral cavity; (10) tumors of the oral mucosa, both benign and precancerous.

Various bacteria are innoculated in the oral mucosa of the suckling infant and of the bottle-fed baby. The dangers of infection are increased with the onset of the first dentition. Oral hygiene thus becomes a major medical and dental problem from infancy.

The importance of removing all irritative factors, such as excessive smoking, ill-fitting dentures, and poor oral hygiene, and the judicious treatment of those mouth lesions which may develop into definite malignant lesions cannot be over-emphasized.

MUSCLE-MOULDING MOVEMENTS FOR UPPER IMPRESSIONS

These Simple Muscle-Moulding Movements Give Perfectly Muscle-Moulded Impressions

Adaptol

THAT is how easy it is for you to get — **with "ADAPTOL"** — muscle-moulded impressions with a physiological adaptation which can never be attained by muscle-trimming with less plastic, mouth-setting impression materials.

When muscle-moulding an "ADAPTOL" impression, you merely support the impression while the patient performs these movements and then swallows once or twice. Do not use pressure; or force the "ADAPTOL" against the muscles; or hurry. "ADAPTOL" yields readily to muscular tension and will remain mouldable in the mouth until chilled with cold water.

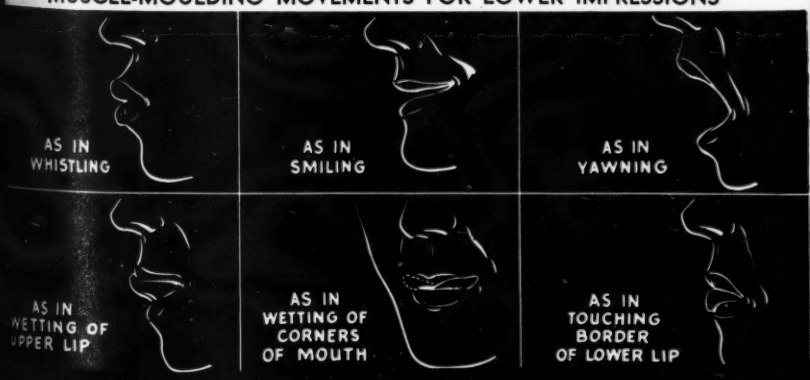
"ADAPTOL" impressions produce dentures which are supported by **not dislodged by,** muscular function.

for Positive Denture Stability

J.F. **JELENKO** & CO., Inc.
Manufacturers of Dental Golds & Specialties
136 West 52nd Street New York, U. S. A.

Kaye Prosthetic Charts sent on request

MUSCLE-MOULDING MOVEMENTS FOR LOWER IMPRESSIONS


AS IN WHISTLING
AS IN SMILING
AS IN YAWNING
AS IN WETTING OF UPPER LIP
AS IN WETTING OF CORNERS OF MOUTH
AS IN TOUCHING BORDER OF LOWER LIP

DENTAL MEETING *Dates*

Women's Dental Society of New York, regular meeting, Hotel Pennsylvania, New York City, October 21.

•

The American Society for the Advancement of General Anesthesia in Dentistry, annual fall meeting, Midston House, New York, October 26.

•

The New York Society for Oral Diagnosis, regular meeting, Squibb Hall, New York City, October 21.

•

Odontological Society of Western Pennsylvania, Pittsburgh, November 3-5.

•

New York Society of Orthodontists, New York, November 9-10.

•

American Association for the Advancement of Oral Diagnosis, Boston, Mass., November 12-13.

•

Ohio State Dental Association, annual meeting, Cincinnati, November 9-11.

•

Greater New York Dental Meeting, New York, December 7-11.

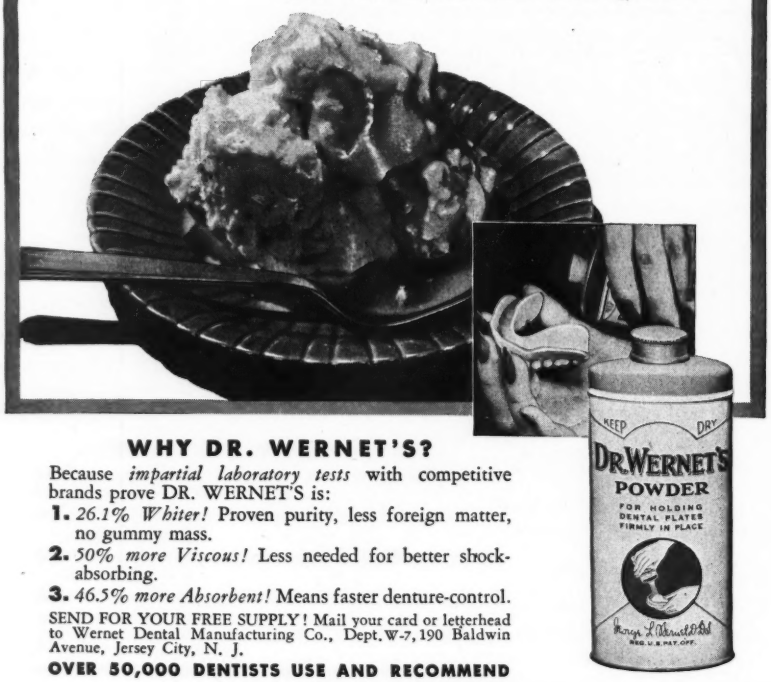
(*Continued on page* 491)

PROVING THAT ALL DENTURE POWDERS ARE *NOT* ALIKE!

So white, So pure

YOU EAT IT IN ICE CREAM

The crude gum from which DR. WERNET'S Powder is made is the finest, purest and most expensive in the world . . . *the same grade used as a binder in the highest grade ice-creams!* No other powder can make this claim. Therefore when you recommend DR. WERNET'S you are recommending absolutely safe, digestible material. Each pound is scientifically selected, carefully milled and refined to eliminate all foreign matter.



WHY DR. WERNET'S?

Because *impartial laboratory tests* with competitive brands prove DR. WERNET'S is:

1. *26.1% Whiter!* Proven purity, less foreign matter, no gummy mass.
2. *50% more Viscous!* Less needed for better shock-absorbing.
3. *46.5% more Absorbent!* Means faster denture-control.

SEND FOR YOUR FREE SUPPLY! Mail your card or letterhead to Wernet Dental Manufacturing Co., Dept. W-7, 190 Baldwin Avenue, Jersey City, N. J.

OVER 50,000 DENTISTS USE AND RECOMMEND

DR. WERNET'S POWDER

COMPLETES YOUR DENTURE SERVICE

EFFICIENT ANTISEPSIS IN THE MOUTH

• Conservative operative technic in such a highly contaminated area as the oral cavity requires the use of a particularly efficient antiseptic agent such as 'S.T. 37' Antiseptic Solution.

This preparation is not only highly bactericidal and non-irritating, but also exerts a soothing surface analgesic effect.

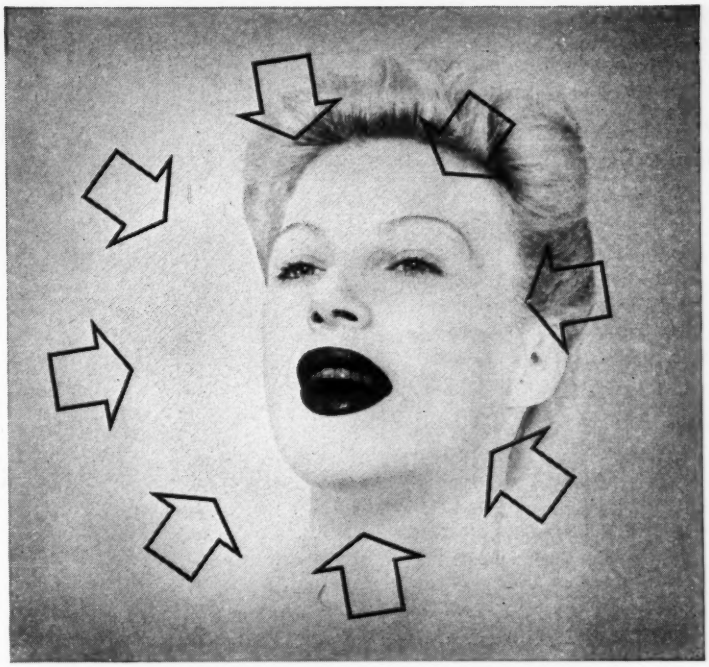
Moreover, the low surface tension of 'S.T. 37' Antiseptic Solution enhances its germicidal activity by making possible the penetration of minute tissue spaces, and relative freedom from toxicity permits natural systems of defense to operate unhindered.

• • •

Few, if any, antiseptics suitable for use in the oral cavity have the laboratory and clinical background of 'S.T. 37' Antiseptic Solution.

Its bactericidal activity is demonstrable in dilution, in the presence of serum, blood and saliva, in infected wounds, and when applied to the gum margin. It is stable, stainless, and *will not attack heavy metals.*

Finally, this pleasant-tasting, colorless, safe antiseptic is well received by patients of all ages and temperaments. In five-ounce and twelve-ounce bottles.



'S.T. 37' ANTISEPTIC SOLUTION

Sharp & Dohme
PHILADELPHIA

(*Continued from page* 489)

Dental Protective Association, annual meeting, Palmer House, Chicago, December 21.

•

American Association for the Advancement of Science (Dental Subsection), New York, December 28.

•

District of Columbia Dental Society, second and fourth Tuesdays in each month, from October to June at the United States Public Health Service Auditorium, Washington.

•

Chicago Dental Society, February 22-25, 1943.

•

Pacific Coast Society of Orthodontists, San Francisco, Calif., February 22-24, 1943.

•

American Association of Orthodontists, Chicago, May 3-6, 1943.

Connecticut Dental Commission, regular meeting, Hartford, November 17-21. For information write to Doctor C. G. Brooks, Recorder, New London.

•

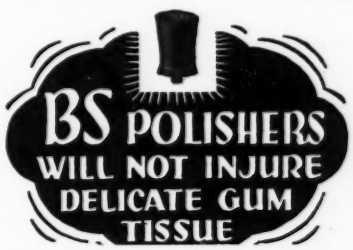
Ohio State Dental Board of Examiners, regular meeting, Ohio State University, College of Dentistry, week of October 19. For information write to Dr. Earl D. Lowry, Secretary, 79 East State Street, Columbus.

•

Virginia State Board of Dental Examiners, regular meeting, Medical College of Virginia, Richmond, March 30. For information write to Doctor John M. Hughes, Secretary, 715 Medical Arts Building, Richmond.

•

New Jersey State Board of Dental Examiners, regular meeting, April 5-10, 1943. For information write to Doctor W. E. Wilson, Secretary, 150 East State Street, Trenton.



They're made of the highest quality soft, flexible rubber . . . with no exposed metal whirling in the patient's mouth.

They're more comfortable for the patient because they clean those deep down pits and fissures thoroughly yet gently . . . and clean between the teeth and under the free gum margin without injuring the delicate gum tissue. They run cool and smooth and do not throw or splatter abrasive. Try BS Polishers the next time you order. You'll like them!

Young DENTAL MFG. CO ST. LOUIS, MO
ESTABLISHED OVER 40 YEARS AGO

See second cover D.D.10

UNIVERSAL DENTAL CO.
48TH & BROWN STS., PHILADELPHIA, PA.

Please send Universal Mold Chart.

Dr. .....

Address .....

Dealer .....

See page 455 D.D.10

GENERAL ELECTRIC X-RAY CORP.
2012 JACKSON BLVD., CHICAGO, ILL.

Please send CDX information.

Dr. .....

Address .....

Dealer .....

See pages 456-457 D.D.10

VERNON-BENSHOFF CO.
P.O. BOX 1587, PITTSBURGH, PA.

Please send Vernonite studies.

Dr. .....

Address .....

City .....

See page 458 D.D.10

COOK-WAITE LABORATORIES, INC.
170 VARICK ST., NEW YORK CITY

Please send information concerning Novocaine-Pontocaine-Cobefrin.

Dr. .....

Address .....

City .....

See page 459 D.D.10

C. V. MOSBY CO.
3525 PINE BLVD., ST. LOUIS, MO.

Please send me the following books:

.....

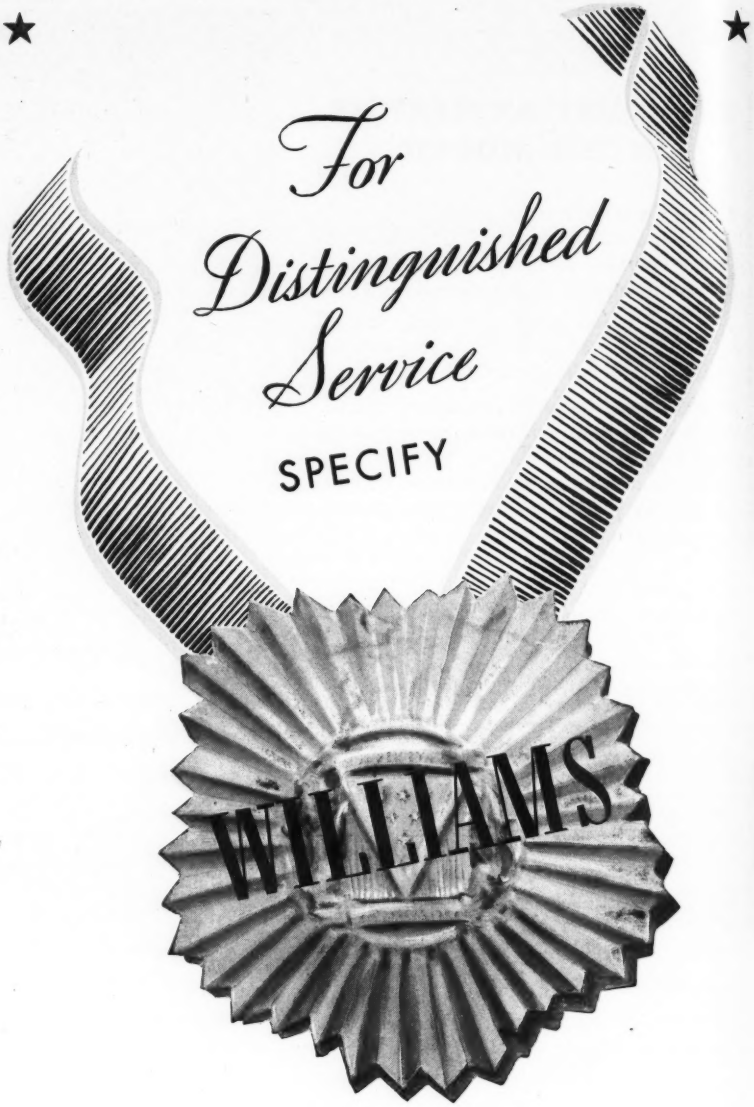
.....

☐ Here is my check. ☐ Charge my account.

Dr. .....

Address .....

City .....



WILLIAMS "6" ALL PURPOSE CASTING GOLD

At your dealers... or write

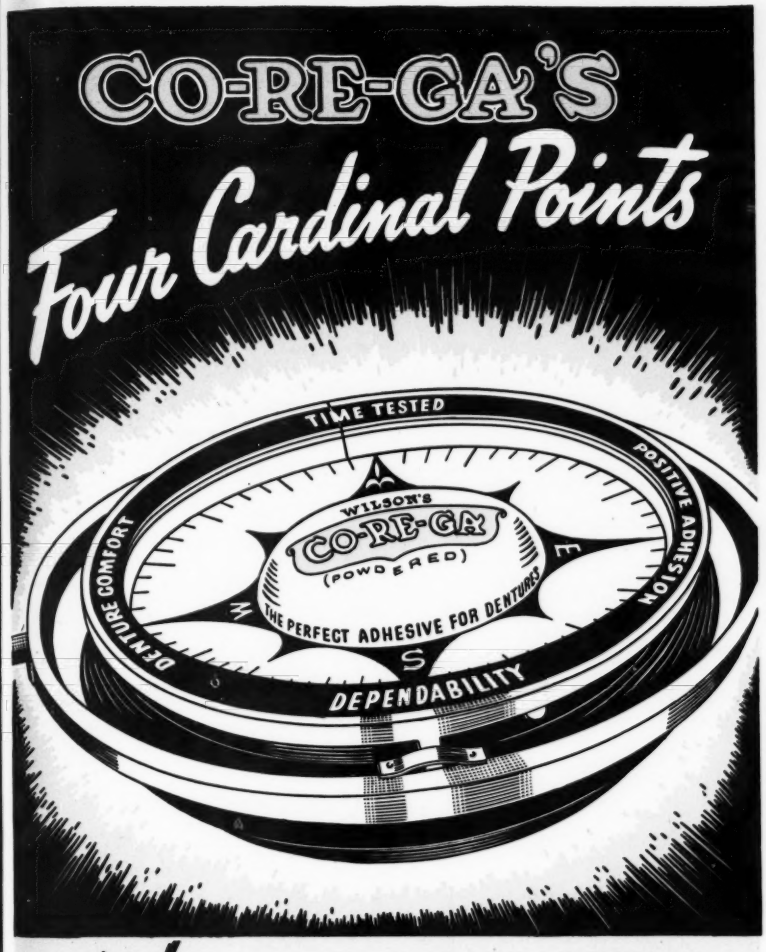
WILLIAMS GOLD REFINING COMPANY
Buffalo, New York Fort Erie, N., Ont.

USE

LAVORIS

Keep The Mouth And Throat Clean

Give Lavoris a trial and note the result



Doctor!

THIS COUPON IS FOR YOUR EXCLUSIVE USE

PLEASE SEND FREE SAMPLES FOR PATIENTS

Dr._____

COREGA CHEMICAL COMPANY
208 ST. CLAIR AVE., N. W. CLEVELAND, OHIO

CŌ-RE-GA *is not advertised to the public*

See page 461 D.D.10

KONFORMAX LABORATORIES, INC.
1720 AVENUE Y, BROOKLYN, N. Y.

Please send latest Konformax Impression Material Folder.

Dr. .....

Address .....

City .....

See page 462 D.D.10

BRISTOL-MYERS CO.
19 EN WEST 50TH ST., NEW YORK CITY

Please send Sal Hepatica literature.

Dr. .....

Address .....

City .....

See page 482 D.D.10

HARRY J. BOSWORTH CO.
1315 S. MICHIGAN AVE., CHICAGO, ILL.

Please send Alpha-Perles information.

Dr. .....

Address .....

City .....

See page 482 D.D.10

THE W. V-B. AMES CO.
FREMONT, OHIO

Please send free booklet.

Dr. .....

Address .....

City .....

See page 480 D.D.10

HYGIENIC DENTAL RUBBER CO.
AKRON, OHIO

Please send information concerning Hygienic products.

Dr. .....

Address .....

City .....

See page 484 D.D.10

WILMOT CASTLE CO.
1123 UNIVERSITY AVE., ROCHESTER, N. Y.

Please send information concerning Castle Lights.

Dr. .....

Address .....

Dealer .....

See page 485 D.D.10

MCKESSON APPLIANCE CO.
TOLEDO, OHIO

Please send information concerning the McKesson Easor.

Dr. .....

Address .....

Dealer .....

See page 490 D.D.10

WERNET DENTAL MFG. CO., DEPT. W7
190 BALDWIN AVE., JERSEY CITY, N. J.

Please send free supply of Wernet's Powder.

Dr. .....

Address .....

City .....

See page 492 D.D.10

WILLIAMS GOLD REFINING CO.
BUFFALO, N. Y.

Please send Williams "6" Casting Gold information.

Dr. .....

Address .....

Dealer .....

See page 493 D.D.10

COREGA CHEMICAL CO.
208 ST. CLAIR AVE., N. W., CLEVELAND, OHIO

Please send samples of Corega.

Dr. .....

Address .....

City .....

See back cover D.D.10

THE DENTISTS' SUPPLY CO.
220 WEST 42ND ST., NEW YORK CITY.

Send free copy of "Trubyte New Hue Guide to Personalized Dentures."

Dr. .....

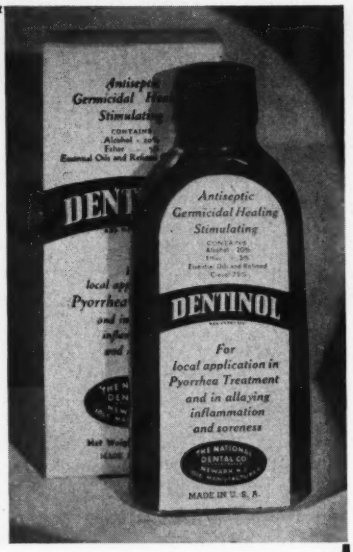
Address .....

City .....

PYROZIDE TOOTH POWDER

—

DENTINOL



Success in the treatment of VINCENTS ANGINA, PYORRHEA and all peridontal infections, inflammation and soreness of the oral cavity, can best be accomplished through the use of theropeutic agents having the highest germicidal efficiency, with minimum toxic or tissue-destroying properties, in conjunction with thorough instrumentation.

The combination of ingredients used in producing DENTINOL makes it the ideal germicide and healing agent for dental purposes.

Accept no substitutes for DENTINOL or PYROZIDE TOOTH POWDER.

WEB DISTRIBUTING CO.
259 South St. NEWARK, N. J.

Are you buying

U. S. WAR

Bonds and Stamps?

PUBLICATION OFFICE:
1005 LIBERTY AVE.
PITTSBURGH, PENNSYLVANIA

MERWIN B. MASSOL .....*Publisher*
ROBERT C. KETTERER ...*Publication Manager*
W. EARLE CRAIG, D.D.S.....*Associate*
STUART M. STANLEY .....*Eastern Manager*
JOHN J. DOWNES .....*Western Manager*
A. D. MCKINNEY .....*Southern Manager*
DON HARWAY .....*Pacific Coast Manager*
DOROTHY STERLING .....*Promotion Manager*
ELIZABETH BOYLE .....*Circulation Manager*

•

EDITORIAL OFFICE: 708 CHURCH ST. EVANSTON, ILLINOIS

EDWARD J. RYAN, B.S., D.D.S....*Editor*
ETHEL H. DAVIS, A.B. .....*Assistant Editor*

•

Manuscripts and editorial correspondence should be addressed to the Editorial Office.

•

SUBSCRIPTIONS—In the United States, Alaska, Canada, Cuba, Guam, Hawaiian Islands, Mexico, Philippines, Puerto Rico, Central and South America: One year, $2; two years, $3; three years, $5. Three-year subscription includes *Visual Education in Dentistry*. (See below.) All other countries: One year, $2.75; two years, $4.50; three years, $7.25. Subscriptions are payable in advance.

•

ADDRESS CHANGES—Please allow two weeks for address changes to become effective. Please furnish old as well as new address.

•

PUBLICATION DATE—The magazine is mailed on the fifteenth of the month of issue.

•

REMITTANCES for subscriptions or for extension services, which are named below, should be made payable to *Dental Digest, Inc.*

•

EXTENSION SERVICES—*Visual Education in Dentistry*, printed in full color, in DENTAL DIGEST page size. Includes 30 charts from the series, *Visual Education in Dentistry*. Prices: $1 per copy to DENTAL DIGEST subscribers; $2 per copy to non-subscribers; $1 per copy with new subscriptions at the rates named above. *Ryan Examination and Treatment Records*, carrying an anatomically accurate chart with space for examination data, lithographed on durable paper of proper texture for crayon, pencil or ink. Price $1 per pad of 50, punched for standard loose-leaf binder. *Toothbrushing Routine* (which appeared in November, 1937) and *The Castle That Was Destroyed* (published in May, 1939). Prices: 100, $6.50; 200, $10.00; 300, $13.00; additional 100's $3.00. *Your Teeth and Your Life* booklet. Prices: 25, $1.00; 100, $3.00. Orders, accompanied by remittances, should be mailed to Pittsburgh.

•

DISTRICT ADVERTISING OFFICES — *New York*, 18 East 48th Street; *Chicago*, Peoples Gas Building; *St. Louis*, Syndicate Trust Building; *Los Angeles*, 816 West 5th Street. (*For advertising information only.*)

•

Copyright, 1942, by Dental Digest, Inc. Entered as second class matter at the postoffice at Pittsburgh, Pennsylvania, under the Act of Congress, March 3, 1870. *Printed in U.S.A.*